ENGINEERING NEWS-RECORD

Into New Orleans over 24 miles of water p. 30

E B POWER GS
UNIVERSITY MICROFILMS I
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ANN ARBOR MICH

A McGRAW-HILL PUBLICATION

Now you can specify an ARMCO PIPE to meet ANY SEWER PIPE REQUIREMENT

For Corrosion Resistance

Various types of Armco Pipe provide the material durability you need. Plain galvanized for normal service, asphalt-coated for added protection, and for the most severe corrosive conditions you can get the complete protection of Armco ASBESTOS-BONDED. This has a layer of inert asbestos fibers embedded into the zinc coating and sealed with a special saturant.

For Erosion Resistance

Armco PAVED-INVERT Pipe has a tough bituminous pavement in the lower quarter—where the wear is most severe. This provides a balanced design for extra service life.

For Highest Flow Capacity

Armco SMOOTH-FLO Sewer Pipe has a special bituminous lining that completely fills and covers the strength-giving corrugations. Provides a smooth, efficient interior.

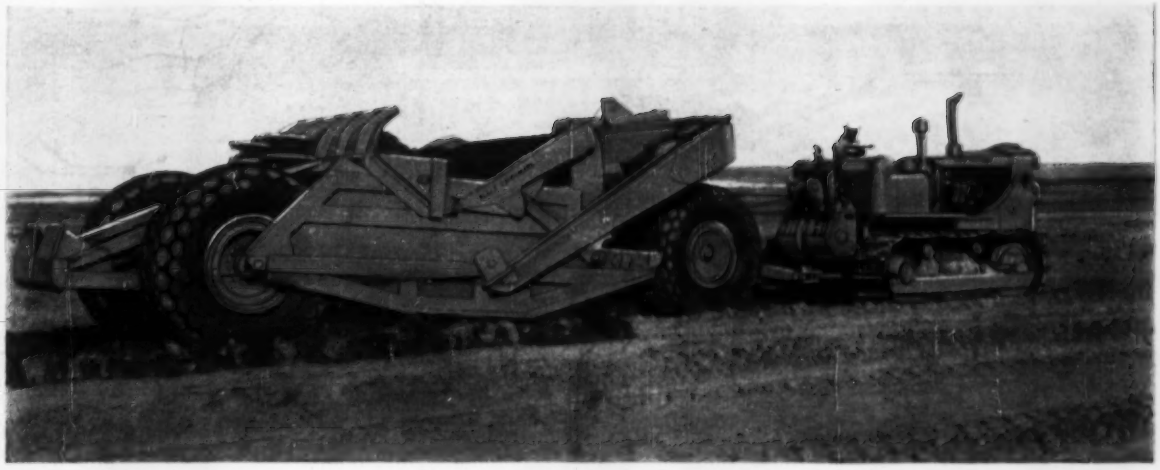
For Strength and Waterway Area

You can specify exactly what you need from a wide range of gages and sizes.

Write us for specific data on Armco Corrugated Metal Sewer Structures. There is one to meet every service condition. Armco Drainage & Metal Products, Inc., 4036 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO SEWER STRUCTURES

ARMCO®



Allis-Chalmers HD-16 crawler tractor and 315 pull scraper

Teamed to increase output ...keep jobs on the move

Here's more of everything you want in a tractor-scraper team . . . a combination of advanced basic design features that cut cost and time per yard.

The HD-16 has an all-steel box-A main frame that absorbs shocks and protects the power train. A powerful Allis-Chalmers diesel engine and your choice of either torque converter or standard transmission drive, give you plenty of work power for big jobs. And with 1,000-hour lubrication intervals for truck wheels, idlers and support rollers, even under severe conditions, you can eliminate daily greasing . . . convert maintenance time into production time.

With its wide, low bowl and offset cutting edge, the 315 scraper makes effective use of the HD-16's power to get heaping, void-free loads. Wheels are inside the cutting edge for smooth loading . . . and loaded weight is equally distributed on all four wheels for fast hauling, long tire life.

This earth-moving team can give you big output plus real dependability. Let your Allis-Chalmers construction machinery dealer show it to you now.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIV., MILWAUKEE 1, WIS.

ALLIS-CHALMERS AC

HD-16

with hydraulic torque converter drive
150 net engine hp
31,600 lb

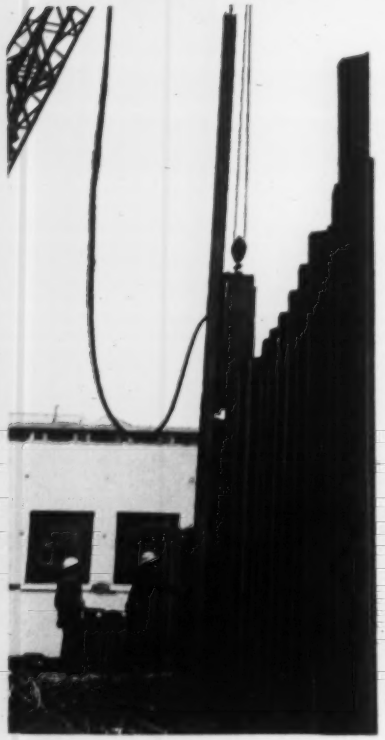
with standard transmission
141 belt hp
31,500 lb

AC-315

15 cu yd struck
20 cu yd heaped
25,850 lb
cable-controlled

At 3 P.M....

CAVE-IN!



Cave-ins will happen, through no fault of the contractor. On this excavation job, there was erratic soil behavior, shifting loads, saturating rain . . . everything unpredictable.

When it happened, L. B. Foster Co. was called at 3 P.M. for rental steel-sheet piling *in a rush*. We cut MP-116 piling in our yard, and delivered it in Foster trucks to the job site 400 miles away before the crews started work next morning.

This is typical of the dependable help contractors can expect . . . and get . . . with Foster's Piling Rental Plan. Always the exact length and exact section . . . when you need it . . . on low fixed cost. Call your nearest Foster office for quotations—find out for yourself the real savings in Renting Piling from Foster.

STEEL-SHEET PILING • PIPE-FOR-PILING
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RAILS • TRACK EQUIPMENT
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EIGHTY-SECOND YEAR OF PUBLICATION

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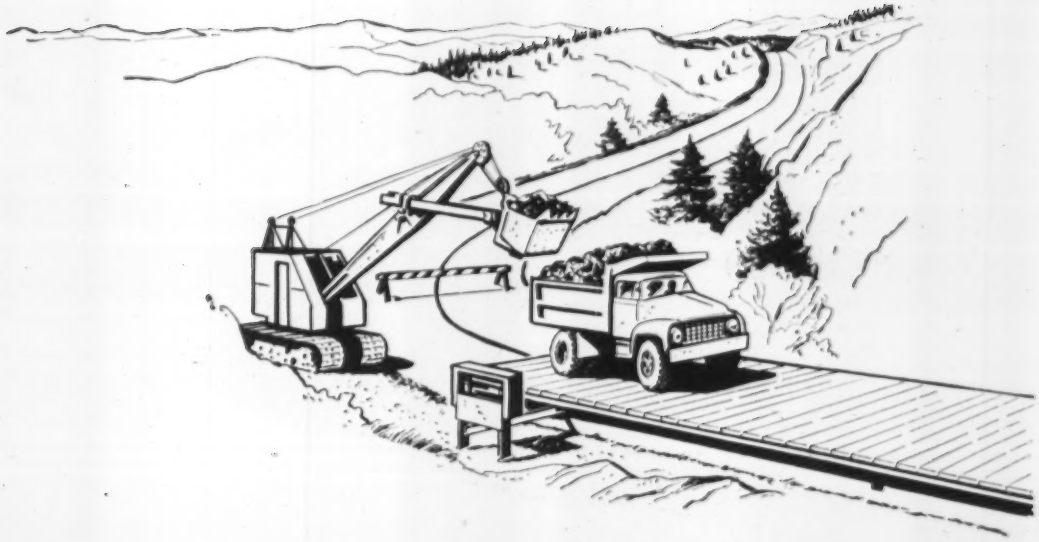
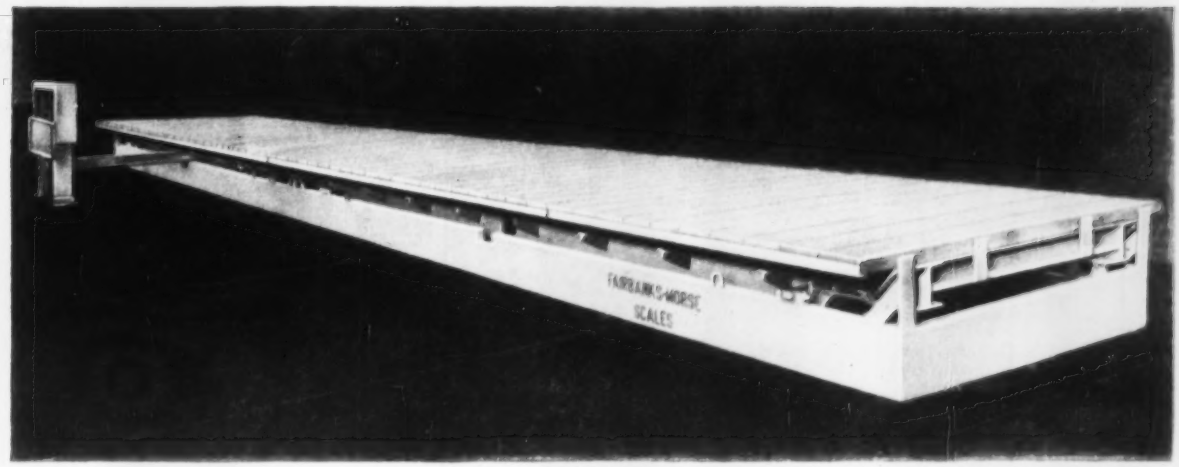


Weigh it at the job site



Here's a portable truck scale, completely self-contained, that can be transported by truck! Designed for use in road construction, at quarries, in gravel pits and on construction sites, the new Fairbanks-Morse Portable Vehicle Scale is a completely self-contained unit made to travel on a flat bed truck. No scale pit is needed!

Just take off the wooden platform panels, disconnect the transverse lever and tighten the hold-down bolts—and you have a package eight feet wide, legal to ride the highways.

Units can be used singly or connected in tandem to the same registering beam or dial. Standard models are available in eight lengths to 60 feet and in capacities of 30, 40 and 50 tons.

Analyze your present weighing practices. On-site weighing will probably save you time and money. Write today for the Fairbanks-Morse New Portable Vehicle Scale Bulletin No. ASM520.1. Fairbanks, Morse & Co., Dept. ENR-830, 600 South Michigan Avenue, Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the BEST

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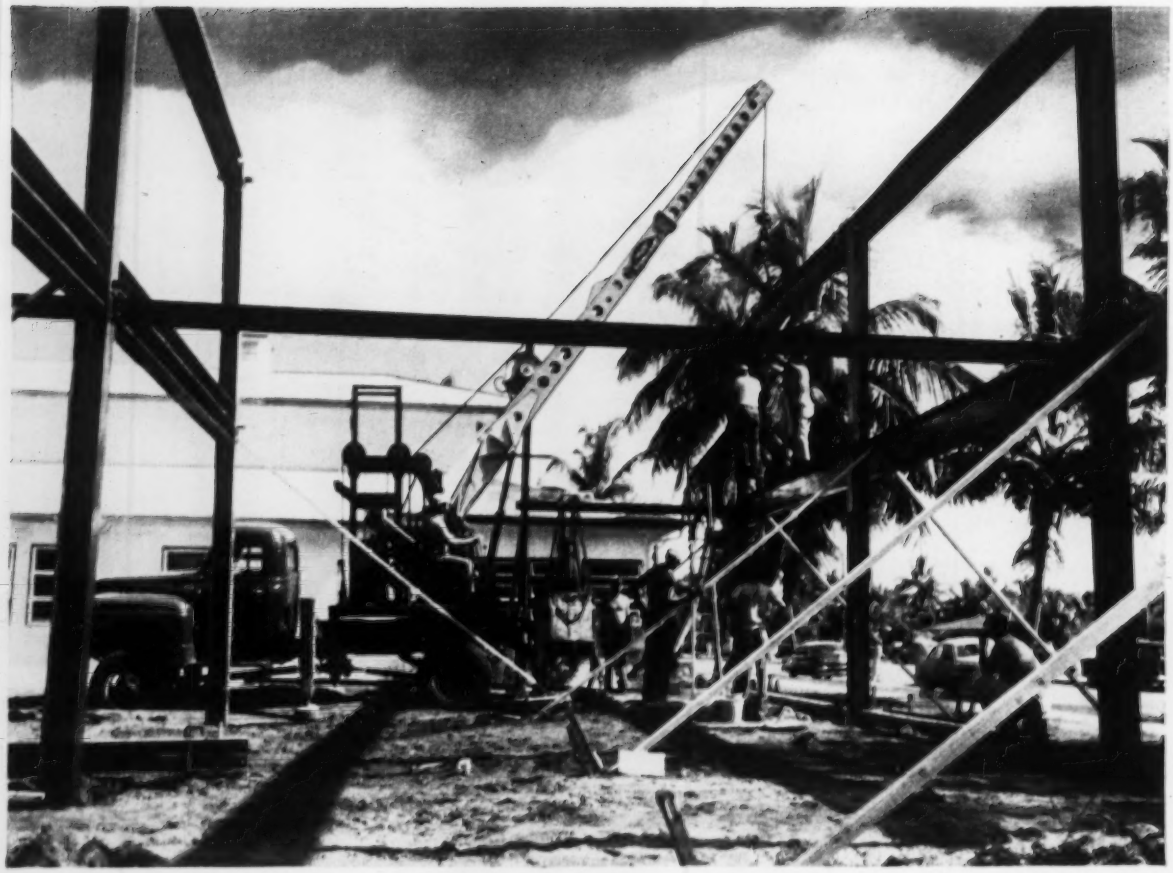


This H-3 Hydrocrane demonstrates its versatility by erecting steel, excavating for and setting sewer pipe and septic tanks and pouring concrete . . . all on the same job in the same day.

Hydrocrane's Working Boom Hoist Speeds Building Erection

With the Hydrocrane, *any* boom angle is a working position because the boom is raised or lowered dozens of times a day as part of the crane's regular operating cycle. Even with full load suspended you can raise or lower boom, *and* swing or telescope *at the same time*, with the precise control that only the Hydrocrane offers. It's just one of the many unique time-saving features that make the Bucyrus-Erie Hydrocrane the ideal builder's tool.

You also gain many advantages working in confined areas. The Hydrocrane's working boom hoist, together with the line hoist, lifts the load over stockpiled materials; under wires, branches or beams as it swings to the spot . . . and places it in the precise position. Hydrocrane's rugged outriggers, which permit conventional motor truck mounting, give you the unusual combination of high capacity and top mobility. Extremely short tail swing (about 4½ feet) lets you put the crane in the tightest spots.

Start now to move those erection and material handling costs to the profit side of your books. Arrange for a demonstration of either the 9-ton H-5 Hydrocrane or the 5-ton H-3 with your Bucyrus-Erie distributor. 154H56

BUCYRUS ERIE SOUTH MILWAUKEE, WISCONSIN

B.F.Goodrich

How all-nylon Super Traction tires pull contractor through the big, tough jobs

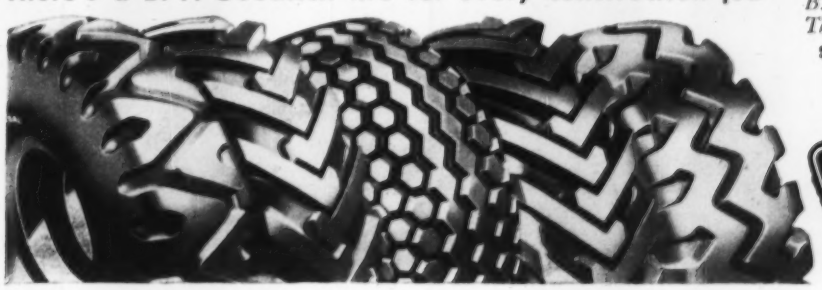
SUGDEN & SIVIER, INC., operate 150 vehicles, including dump and transit mix trucks, semi-trailers, scrapers and graders, out of Oak Park, Michigan. The unit above is at work on a slag grading job at the Detroit Sewage Treatment Plant where both traction and flotation are all-important.

That's why this contractor chooses B. F. Goodrich *all-nylon* Super Traction tires. They pull through the big, tough assignments and do an "all-around job", the company reports. Thick Super Traction cleats take a deep bite, give positive traction. The wide tread makes a big footprint to give greater flotation in soft going. And under the tread is the B. F. Goodrich *all-nylon* cord body.

Nylon withstands double the impact of ordinary cord materials, resists heat blowouts and flex breaks. That's why the B. F. Goodrich *all-nylon* cord body outwears even the extra-thick Super Traction tread, *can still be recapped over and over!*

Your B. F. Goodrich retailer has the big, tough tires for your off-the-road work. Let him show you the ones that will save you money. Or write *B. F. Goodrich Tire Co., A Division of The B. F. Goodrich Co., Akron 18, Ohio.*

There's a B. F. Goodrich tire for every construction job

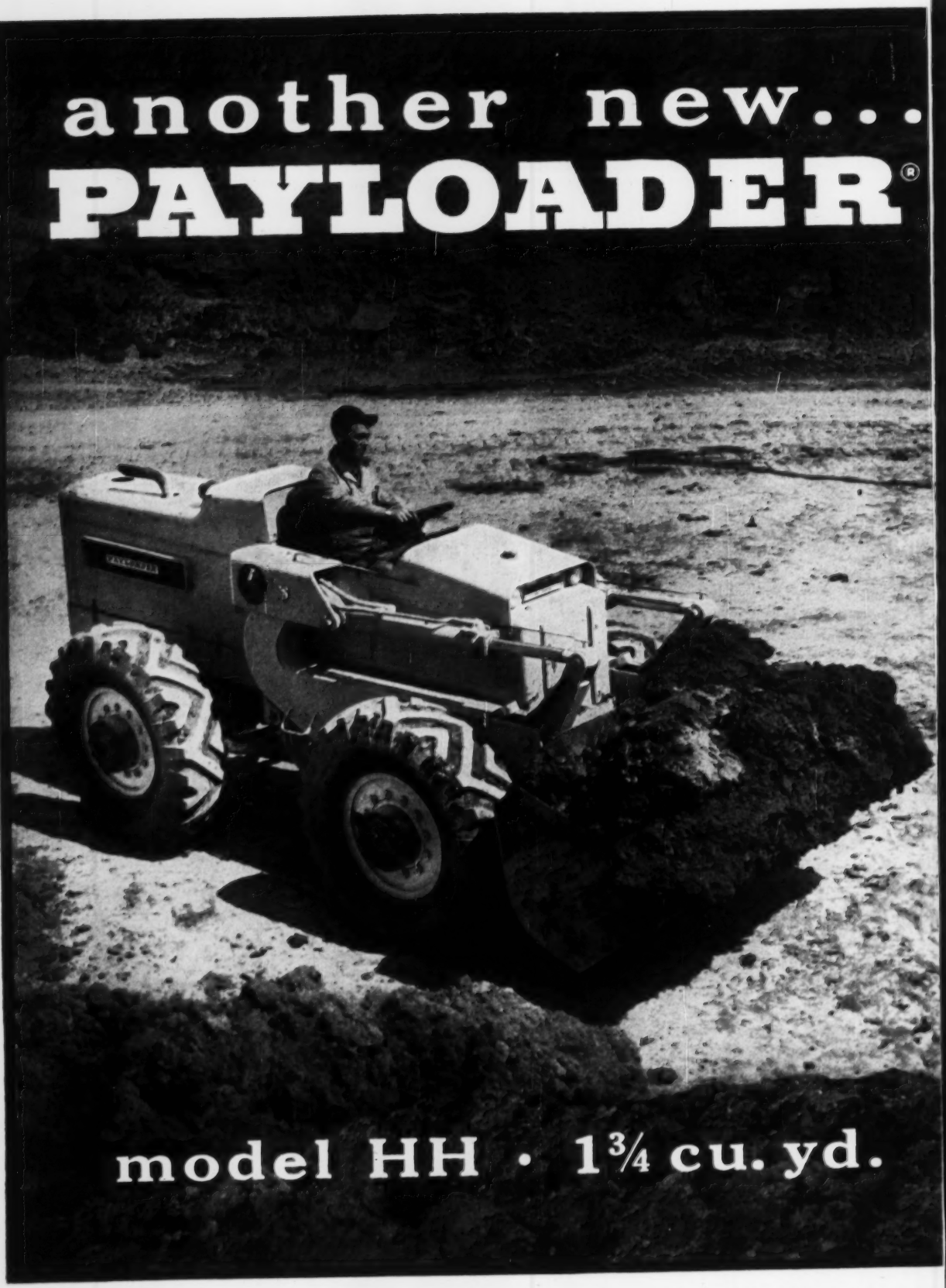


Specify B. F. Goodrich tires when ordering new equipment

B.F.Goodrich
FIRST IN RUBBER

Your B. F. Goodrich retailer is listed under Tires in the Yellow Pages of your phone book

another new...
PAYLOADER®



model HH · 1¾ cu. yd.

more productive

This new, improved model HH is the finest tractor-shovel in its class ever offered. It has exclusive features that give it tremendous productive capacity for its size and enable it to *go* and *do* jobs where rubber-tire tractor-shovels couldn't operate before.

It handles easier and faster, and rides smoother, with or without a load, than any other make and can out-produce bigger machines. It has balanced design and durability throughout to do a big day's work day-after-day. Your "PAYLOADER" Distributor will be glad to demonstrate its superior performance and greater productive capacity.

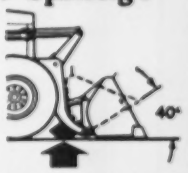
Long-life, high-traction drive train: Heavy duty planetary final drives in the wheel hubs, and hypoid differential gearing keep torque low in axles . . . prolong life of axles and *all* drive train parts.

Hydraulic shock absorber: A shock absorber in the hydraulic system smoothes out the ride, permits faster load-carrying speeds over rough terrain — with less spillage.

More production, less effort: Power steer, power brakes (on all four wheels), power shift (no "clutching") and good riding qualities also lessen operator fatigue — promote full production all day.

1956 Industrial Design Institute top award for styling this "PAYLOADER", was presented to Jon W. Hauser of Jon W. Hauser & Associates.

Bigger Loads . . . Less Spillage



Special pads on bottom of boom arms give ground support for powerful pry-out action — relieve the axles and wheels of these strains. Bucket can tip back 40 degrees, before raising, to get heaped loads quick and easy even in shallow cuts and low piles, and to retain heaped loads.

Faster, Easier Operation

The "Paylomatic" transmission in this unit is a complete power-shift type Hough-built expressly for "PAYLOADER" use. It gives instant finger-tip shifting — on the go. There's no stopping for a RANGE shift, no "clutching". The forward-reverse control can also be operated under full engine speed, in any gear . . . all this, plus torque converter drive.

More Reliable Traction

Four-wheel-drive traction is even more reliable on this unit, because it has torque-proportioning differentials — an exclusive "PAYLOADER" feature. The wheels with the best footing get the most power. You get traction and *action* on sand, mud, snow.

THE FRANK G. HOUGH CO.
772 Sunnyside Ave., Libertyville, Ill.

Send 4-wheel-drive "PAYLOADER" information on:

☐ model HO	☐ model HH	☐ model HU
2¼ cu. yd. Payload	1¾ cu. yd. Payload	1½ cu. yd. Payload
1¾ cu. yd. Struck	1½ cu. yd. Struck	¾ cu. yd. Struck

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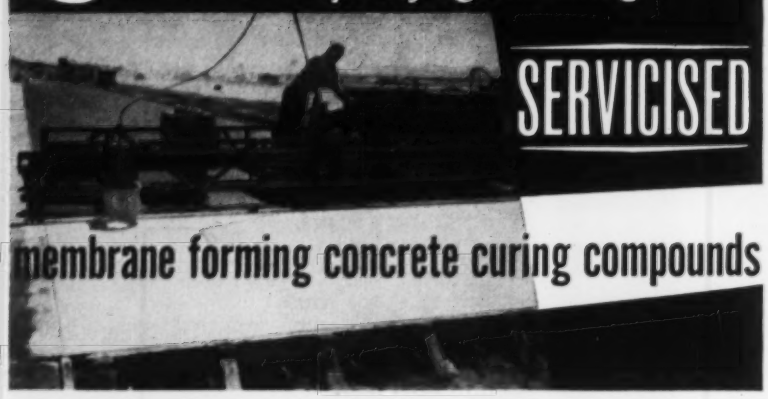
6 reasons for specifying and using SERVICISED membrane forming concrete curing compounds



1. Provide lowest unit of moisture loss
2. Meet official specifications for each particular type
3. Sprayed or painted on vertical surfaces, they will "stay put"
4. Save time, labor, material
5. Will not cake in the drum
6. Guaranteed uniform quality and results

WHITE PIGMENTED TYPE

Servicised White Pigmented Curing Compound provides a film or membrane capable of reflecting heat. It is widely used in areas where atmospheric temperatures exceed 80°F., and properly applied, will reduce concrete temperatures approximately 15°F. Excessively high temperatures during the early hardening period tend to jeopardize setting of concrete and reduces its final strength. High quality inert pigments added to the basic compound also prevent too thin or uneven coverage, as improper application is readily seen. Used on all U. S. Engineers work.

CLEAR TYPE

Servicised Clear Curing Compounds are available in both Wax-Resin and Resin Base Types. Only pure synthetic resins are used with carefully controlled proportions of oils and waxes, etc., in a petroleum solvent to insure a clear, impermeable membrane. Both types can be supplied with a fugitive dye which materially assists in securing proper coverage, and which disappears after application.

WAX-RESIN BASE. A general purpose compound, usually used on mass concrete, pavements. Has excellent water retention properties, allowing slow curing of the concrete which eliminates checking. Dries rapidly and forms a film of uniform texture.

RESIN BASE. Recommended for buildings, offices, architectural concrete, etc. The pure resins, oils and other ingredients present a clear film which does not materially alter the appearance of concrete and it permits early application of adhesives, paint, etc.

AIR ENTRAINING AGENT

Servicised Air Entraining Agent is a highly active, homogenous and clear solution. A relatively small quantity produces maximum air dispersion, yet it is not so critical as to create wide fluctuations in the amount of entrained air should slight variations in the amount used occur. It will not settle out in storage or gum the dispenser, and its action is not jeopardized by the presence of Calcium Chloride. Servicised Air Entraining Agent meets all official specifications, comes ready to use and requires no additional ingredients or treatment before being used. Available in 5 gallon and 55 gallon drums.

Write for special circulars on Curing Compounds and Air Entraining Agent

SERVICISED PRODUCTS CORPORATION

6051 WEST 65th STREET • CHICAGO 38, ILLINOIS

Reader Comment

Overlap, Not Interlock

SIR—In your issue of July 26, p. 64, the description of the cofferdam built by Electricite de France for the Argentat dam correctly states that "An enclosure of cut-off walls of interlocking concrete sheetpiles extends through the riverbed alluvium to rock." However, it is possible that this may be interpreted as conventional sheetpiling work, whereas the presence of boulders in the alluvium prevented the use of such piling.

The curtain wall referred to was made of interlocking piles cast in place, of a type developed by our company many years ago.

We execute two types of cast-in-place pile curtains. One is called pointed piles, in which the piles are cast tangent to one another. The other is generally referred to as interlocking piles, in which piles of the odd series are concreted first at a distance between centers less than two pile diameters. Then the even series are cast in between, of the same diameter as the first piles. The piles overlap, and are, therefore, secant.

An extension of these methods of making concrete curtains — recently developed by our company — is called the Continuous Diaphragm, in which the piles are replaced by true concrete walls concreted in place.

In any of the above-mentioned methods, the piles (or the diaphragm) may have a diameter (or a thickness) varying from 16¼ to 60 inches. The Argentat piles were 19-in. dia, placed in 20-in. dia holes percussion drilled with mud.

SOLETANCHE
Paris (17), France

Prevent Floods?

SIR—Headline in the Los Angeles Times: "13 Killed as Floods Hit Eastern U. S.—Hundreds Flee From Homes and Damage Counted in Millions." So here again we face the never-failing and ever-recurring storm damage, less than a year since the New

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

Letters should be addressed: Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

England floods and the Yuba City, Calif., disaster.

It brings to mind an editorial in Engineering News-Record, Sept. 1, 1955, captioned "Can Flood Control Cope with Flash Floods?" This writer answers a positive no, but *flood prevention* can. Flood prevention begins upstream, and this can be proven by all hydraulic theorems and formulas so far developed.

Although important, the sum total of all storage in check-dams, farm ponds, terraces, contour furrows, etc., is the least important value to be considered. The reduction in velocities lengthens the time of travel to downstream points and reduces peak rates of flow. The total storage capacity plus the lengthening in time of travel can be expected to make upstream flood *prevention* much more effective and valuable than downstream big-dam flood *control*.

CHARLES H. PARKER
Hydraulic Engineer
Bakersfield, Calif.

More on Cantilever Story

SIR—Permit us to extend our congratulations to you for an excellent write-up of "Rocket Test Cantilever Concreting" (ENR July 26, p. 40).

Your readers may also be interested to know that an additional problem confronted by our concrete construction forces was the construction of the reversed batter wall of the upper part of the deflector pit. This required close tolerances and had to be constructed before erection of the support tower for the cantilevers.

ANTHONY V. RIZZI
President
Carbro Construction Corp.
Los Angeles, Calif.

Completing the Record

SIR—The August 9 issue of ENR contains a story concerning Sanitation District No. 1 of Campbell & Kenton Counties, Ky. (p. 28). The article states that the District has been enjoined from the further collection of sewer service charges. Such an order was issued by the Kenton County Circuit Court, but the injunction was dismissed by the Kentucky Court of Appeals five days later. The District is now collecting sewer service charges in a normal manner.

W. D. ANDERSON
General Manager
Sanitation District No. 1

(Reader Comment continued on p. 12)

UNIT
MODEL 510

THE NEW UNIT *Challenger* ... with CLAMSHELL

It's BEST to INVEST in UNIT...

because UNIT's advanced design gives you **Self-Aligning, Replaceable Hook Shoes ... Straight-in-line Engine Mounting with Torque Converter ... Hydraulic Actuated Clutches ... Modern Transmission with Involute Splines ... One Piece Cast Gear Case ... Alloy Steels and Forgings ... Force Feed Lubrication** and many other UNIT advantages. These life-prolonging features are contributing substantially to the performance and efficiency of each machine. And they explain why UNIT equipment is so universally acceptable.

See the many other new features illustrated and described in UNIT CHALLENGER Bulletin C-800. Write for your copy of this bulletin.

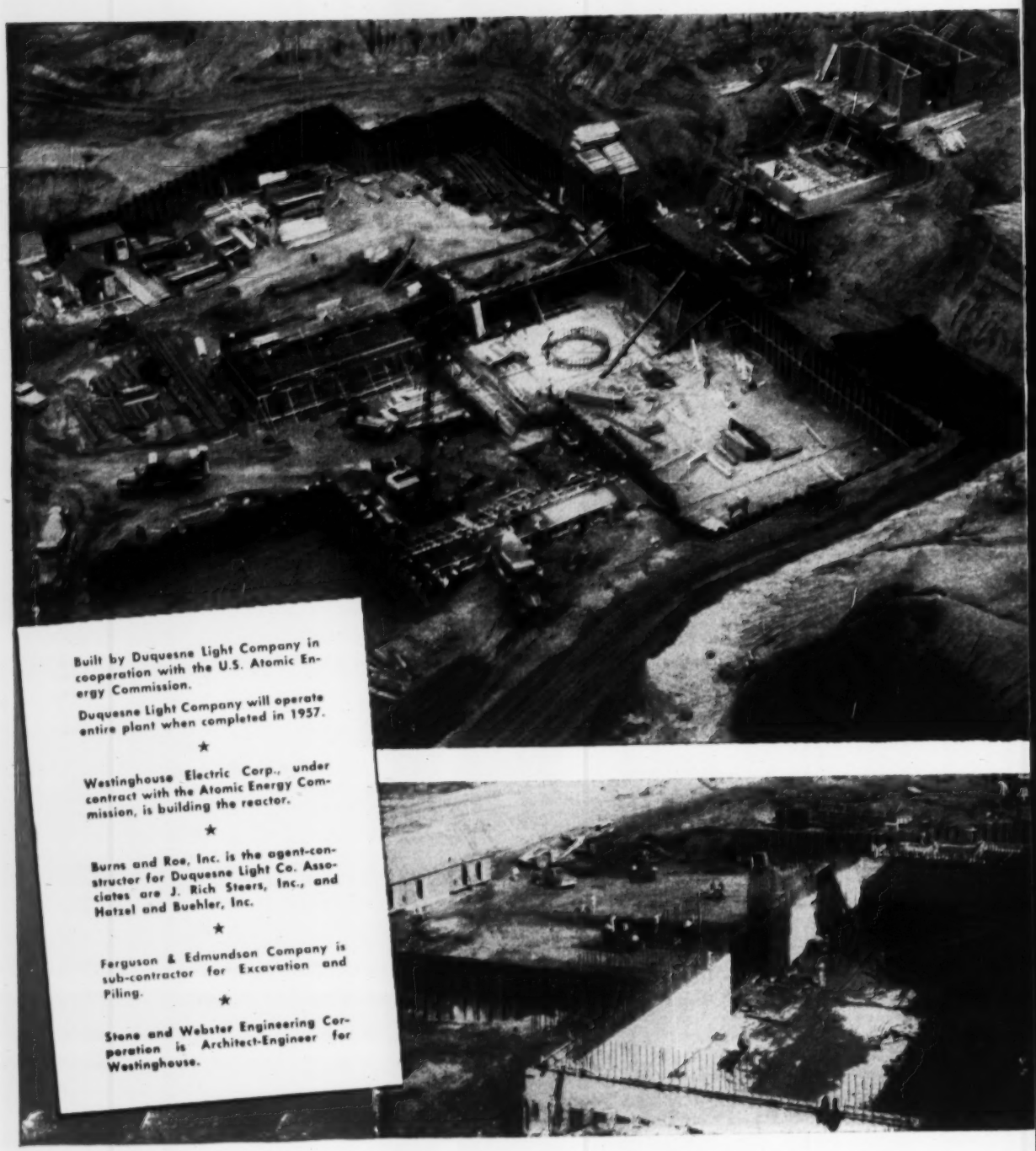
UNIT CRANE & SHOVEL CORP.
6315 W. Burnham St. • Milwaukee 14, Wis., U.S.A.

Geared to boost your earnings!

At Nation's First Full-Scale Atomic Energy

700 TONS OF USS STEEL

provide permanent retaining



Built by Duquesne Light Company in cooperation with the U.S. Atomic Energy Commission.

Duquesne Light Company will operate entire plant when completed in 1957.

★

Westinghouse Electric Corp., under contract with the Atomic Energy Commission, is building the reactor.

★

Burns and Roe, Inc. is the agent-constructor for Duquesne Light Co. Associates are J. Rich Steers, Inc., and Hatzel and Buehler, Inc.

★

Ferguson & Edmundson Company is sub-contractor for Excavation and Piling.

★

Stone and Webster Engineering Corporation is Architect-Engineer for Westinghouse.

Electric Power Plant —

SHEET PILING

wall for main structure of big project!

THE LARGE PICTURE at the left shows the foundation construction for the nation's first full-scale nuclear power plant.

Being built by Duquesne Light Company in co-operation with the Atomic Energy Commission, the huge project is located at Shippingport, Pa.—on the Ohio River about 25 miles below Pittsburgh.

This revolutionary plant, which will have a nuclear reactor producing at least 60,000-kw net electrical output, as well as a turbine-generator capable of 100,000-kw, will deliver electricity to Duquesne's customers in Allegheny and Beaver Counties.

Because the main structure will extend 75 ft. below grade, 23,896 lineal feet of USS sheet piling were driven to an average depth of 36 feet into the ground for the necessary retaining wall prior to the extensive excavating.

The approximately 700 tons of sheet piling not only served as the outside form for the pouring of the reinforced concrete walls, but were left in the ground permanently as a strong, durable steel skin for the concrete—*a double wall, so to speak.*

The application of USS Steel Sheet Piling at Shippingport is further proof that this versatile construction medium is the ideal solution to any problem involving the retention and control of earth or water. Forming a continuous wall, interlocking USS Sheet Piling offers easily installed construction that is strong, rugged and lasting.

For detailed information about this economical steel piling which is available in straight-web, arch-web, and Z-sections, contact the nearest office, or write to our Pittsburgh headquarters.

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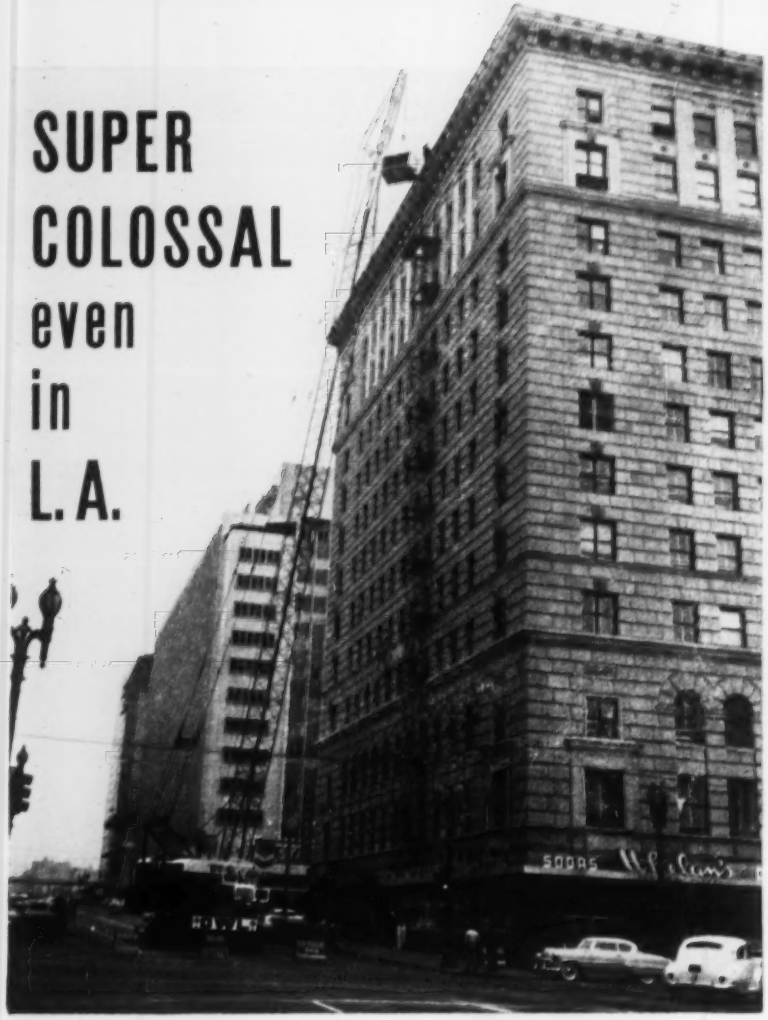
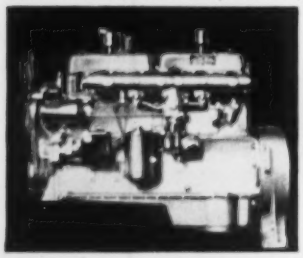


Los Angeles probably saw its highest hoist—10 tons of refrigeration machinery lifted atop the 12-story Roosevelt Bldg.—by a Waukesha-powered, 50-ton American Hoist & Derrick Co. 795-Crane. The self-lifting boom, with its stinger, was 190 ft. high. The Crane is mounted on a Cook Bros. CT-450 Carrier which is also Waukesha-powered. The Owl Truck & Construction Company of Compton, California, own and operated the crane. The job took only one day, instead of the estimated five days needed with a stiff leg.

WAUKESHA ENGINES

Powering Crane (boom)—140-GK
Waukesha Gasoline, six cylinders, 4½-in. x 5½-in., 525 cu. in. displacement.



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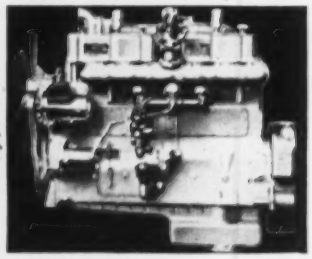
50th ANNIVERSARY Waukesha 1906-1956

322

Powering the Carrier—145-GKB
Waukesha Gasoline, six cylinders, 5¼-in. x 6-in., 779 cu. in. displacement.



WAUKESHA MOTOR COMPANY, Waukesha, Wisconsin • New York • Tulsa • Los Angeles

. . . Reader Comment

Shooting Pin Fasteners

Sir—In ENR July 5, p. 53, a photo caption reads as follows: "Shoot Fasteners Into Place—Quick way to attach aluminum roof deck to steel purlins is to fire a steel pin through the sheet metal with a powder-actuated tool and tighten an aluminum cap nut on the stud. This newly developed fastening arrangement is said to preclude galvanic corrosion between steel and aluminum. These powder-actuated tools can also drive fasteners into concrete and wood."

This seems to me to be an unsafe procedure since there is the danger of missing the steel purlin as the stud is driven, endangering anyone who might possibly be below.

In our safety consultation sheet No. 682 titled, "Powder-Actuated Hand Tools," we quote verbatim the "Techniques for Survival" list of rules directly from your December 3, 1953 issue, p. 29.:

One of these rules said: "Make certain no one is directly behind working area or in line of fire. Keep bystanders at a distance."

If this operation is done this way precautions can be taken. My point is the item 13, to be complete, should state something about the hazard and also list the precautionary measures. Accidents have happened when driving through partitions and walls when all of a sudden someone on the other side is injured or killed. We should continually be on the lookout for such possible accident locations.

Robert L. Moore
Director
Technical and Engineering Division
Lumbermens Mutual Casualty Co.
Chicago, Ill.

CALENDAR

Illuminating Engineering Society, annual technical conference and fiftieth anniversary celebration. Statler Hotel, Boston, Mass., Sept. 17-21.

Building Research Institute, Modern Masonry Conference, Hall of Flags, U. S. Chamber of Commerce Bldg., 1615 H St. N.W., Washington, D. C., Sept. 19-20.

Noise Abatement Symposium, seventh annual meeting, Hotel Sherman, Chicago, Ill., Oct. 11-12.

American Concrete Institute, 9th annual regional meeting, Sheraton-Mount Royal Hotel, Montreal, Canada, Oct. 24-25.

Society for Experimental Stress And Deshler-Hilton Hotel, Columbus, Ohio.

West Coast Noise Symposium, third annual meeting, noise in buildings, Institute of Aeronautical Sciences Auditorium, Los Angeles, Calif., Nov. 12-13.

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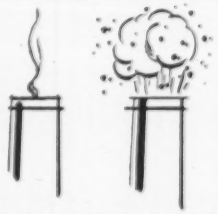
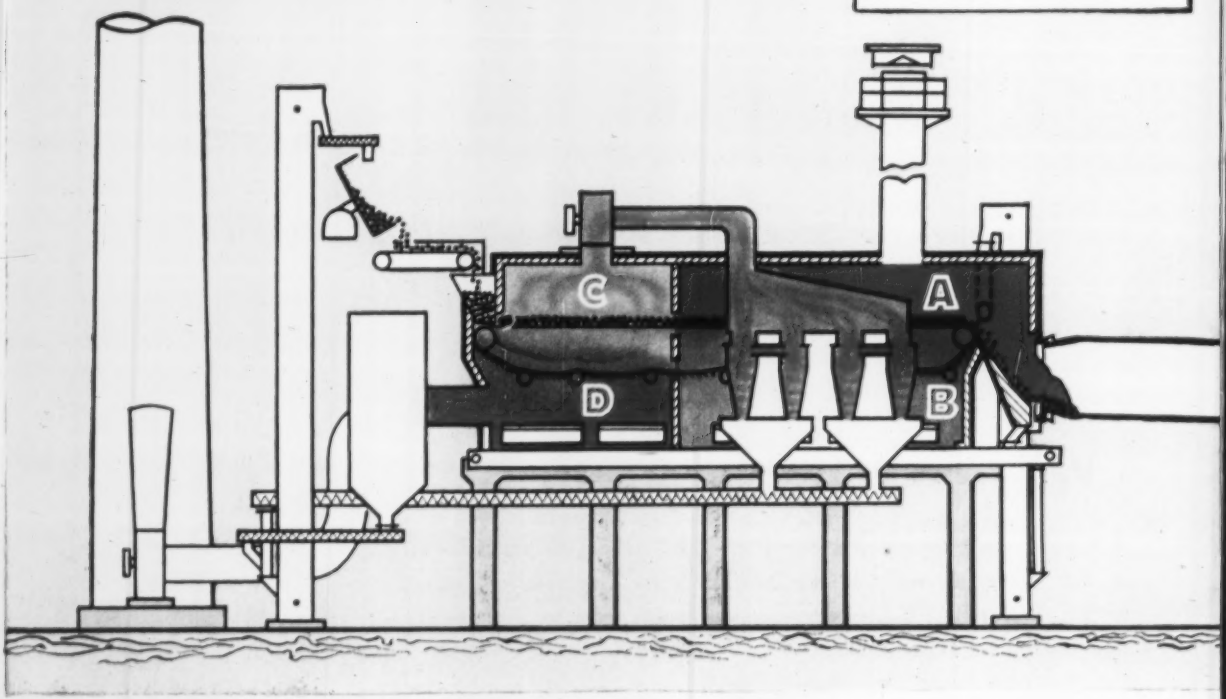
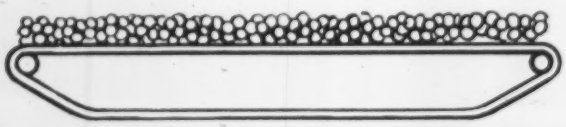


LESS DUST LOSS

Double pass of gases through traveling bed of pellets reduces dust loss below 1% of feed weight without an additional dust-collecting system. Valuable processed material is saved. Dust load of exhaust gas is lower than in any other system.



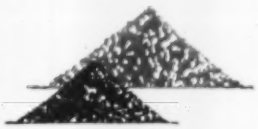


Traveling Grate Affords Many Advantages Because feed volume on traveling grate is constant, kiln operation is uniform and more efficient. There is no segregation of mix. Pelletizing locks in and maintains proportions of components. "Flushing" is eliminated, "ringing" minimized. Voids between pellets permit escape of moisture and gases without fluidization of bed. Because clinker maintains pelletized characteristics, it moves through the rotary kiln uniformly and burns easily.

EFFECTIVE DUST FILTRATION . . . efficient heat transfer . . . more uniform, better burning clinker . . . substantial savings in fuel, power requirements, space and manpower . . . maintenance economy—all these im-

ALLIS-

of Producing Cement

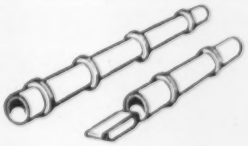


LESS FUEL

Fuel consumption for ACL systems now in operation averages 600,000 Btu per barrel of clinker. Conventional long, dry-process kilns range from 750,000 to 1,000,000 Btu. Powdered coal, fuel oil, natural or coke oven gas may be used.

LESS POWER

The ACL system for burning cement clinker requires about 2.3 kwhr per barrel of clinker for operation of kiln department. This is about one-third less power than required by rotary kilns using other pre-heating systems.



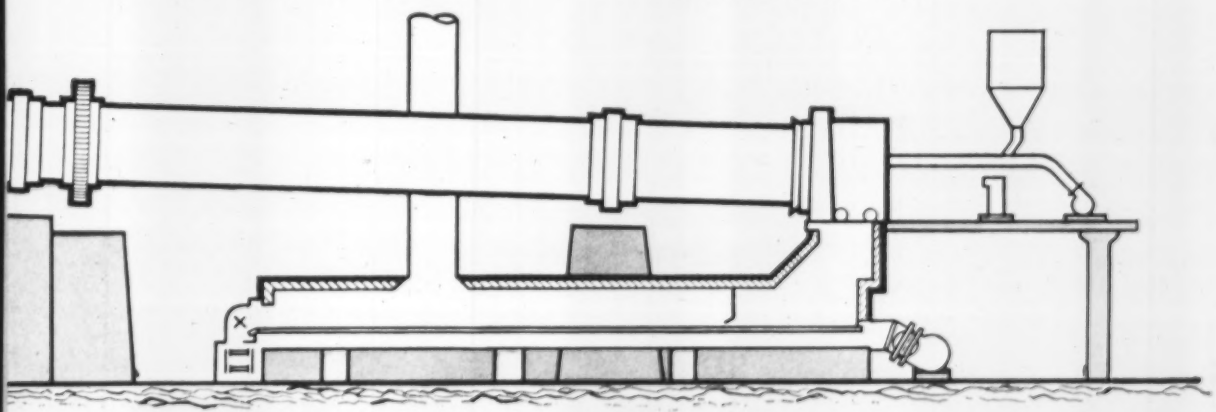
LESS SPACE

Entire ACL system—grate, kiln and cooler — is about 40% shorter than conventional long kiln installations. The totally enclosed traveling grate is about as high as the average kiln feed end housing.

How the Double-Pass System Works

Partial calcining and dust reclamation take place as hottest gases pass through the pellet bed on traveling grate. Gas temperatures are reduced from about 1800 to 500 degrees in this first pass (*A* to *B*). Next, gases pass through cyclones where larger dust particles are removed, and carried back to pelletizer. Final dust filtering takes place as gases pass through moist pellets on feed end of grate. In the second pass (*C* to *D*) gas temperatures are further reduced.

ACL is an Allis-Chalmers trademark.



portant advantages, and many more, are yours with the ACL system.

New Bulletin Available A new bulletin, describing the ACL system, Allis-Chalmers kilns and kiln auxiliaries, is ready for distribution. To get your copy, see your nearby Allis-Chalmers representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin. Ask for Bulletin 07B8431.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

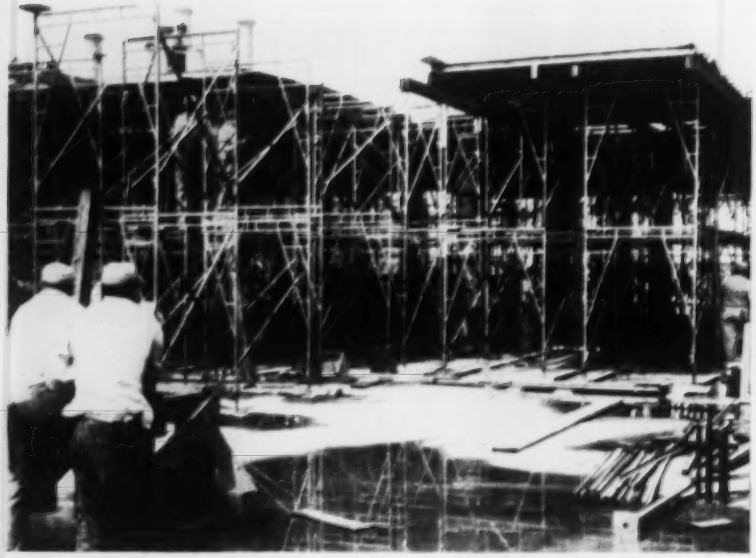
A STICKY LABOR PROBLEM—Building contractors in New Jersey faced an old problem again this week—whether they must follow the patterns set by heavy construction in collective bargaining. The operating engineers staged a statewide walkout (page 79), following refusal of the Building Contractors of New Jersey to agree to a clause requiring the hiring of an engineer to maintain various pieces of small power equipment used on construction jobs. The union, which claims the work as part of its jurisdiction, says contracts with the bulk of its employers (heavy construction) contain such a provision and that it should apply to building construction, too. Principal building contractor objections are higher costs and the risk of jurisdictional disputes.

WANTED: MORE CONTRACTORS IN CANADA—Lack of competition is causing Canadian construction costs to get out of line, contends Alberta Highway Minister Gordon Taylor. He claims that an over-abundance of work is being done by a limited number of firms which have the essential equipment and staff. If Canadians do not seize this opportunity to expand the construction industry, "it is bound to be taken up by free enterprisers from other countries," Taylor warns his countrymen.

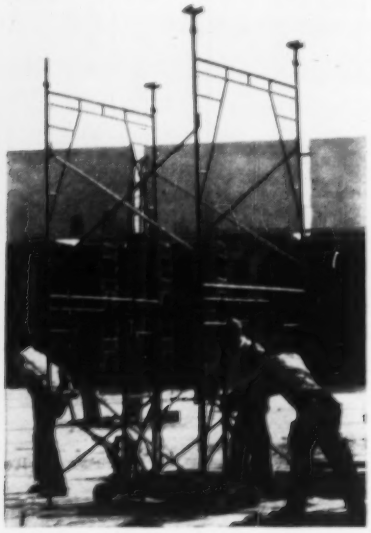
STATE ENGINEER-ARCHITECT PROPOSED—Wyoming has had so much trouble with faulty estimates on building projects at state institutions that its Governor will ask the next legislature to create a state engineer-architect's office. Two building projects—one on which $50,000 had been expended on architect's fees—have been shelved because appropriations were not adequate to cover the low bids.

SHADES OF SHIPWRECKS—Several weeks ago New York City's Health department set 100 large bottles adrift in various parts of the harbor in an attempt to determine sewage flow patterns. Each bottle contained a stamped return postcard and instructions for the finder to indicate the date, time and place the bottle was picked up. As of last week more than half the postcards had been returned.

PRE-BID CONFERENCE—Twenty-six representatives of 21 dredging contracting firms went to Chicago last week to confer with the Corps' North Central Division engineer, Brig. Gen. Paul D. Berrigan. They went in response to information that had been put out on the extent of dredging to be done in the Great Lakes in the months ahead (ENR July 26, p. 26). It comes to $150 million worth. General Berrigan told an attentive audience the extent of the work, and he sought from them an estimate of their capabilities, their interest in bidding and their idea of his bidding schedule.



THIS UNIQUE SYSTEM of moving complete sections of shoring to new pour areas is used by Wigton-Abbott Corp., Plainfield, N. J., to eliminate the job of disassembling and reassembling the shoring. Eleven "Trouble Saver" Sectional Shoring units, each covering 720 sq. ft., are pulled on wood sills by a hand winch. Each unit was slid three times for succeeding concrete pours during construction of the 189' x 231' Monsanto Chemical Co. warehouse, Kearney, N. J. Form work was "permanently" placed on those sections between drop heads.



WHEELED HYDRAULIC dolly is used to move four-frame unit of "Trouble Saver" Shoring to next pour. This system speeds operation for William J. Moran Co. on Emporium-Capwell Co. warehouse covering a city block in Oakland, California. 3,600 frames were used on this building.

Good Planning Cuts Shoring Costs

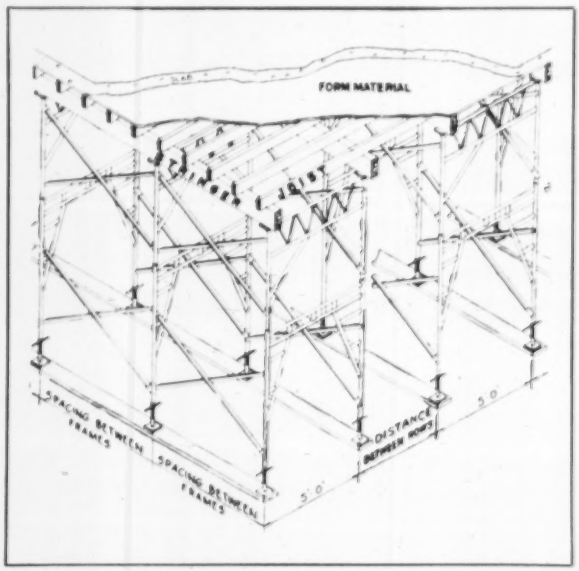
ONE OF THE MOST IMPORTANT advantages of modern sectional steel shoring is the fact that it can be planned on the drawing board. Load bearing strength can be accurately calculated, the number of units pre-determined and the whole installation laid out to assure greatest efficiency on the job.

It is during this planning period that the engineering ability, experience and imagination of The Patent Scaffolding Co. Inc., pays dividends to the contractor. For when a shoring installation is properly laid out on the drawing board, a lot of time, money and trouble are saved on the job.

First, PS Co. helps the contractor select the right kind of shoring by carefully studying the character of the job. Contractors planning with PS Co. have a choice of three types of steel shoring: "Trouble Saver"® Sectional, "TubeLox"® tube and coupler type Shoring and Burton's single post Shores. Once selected, the shoring is laid out to carry the desired loads with an adequate factor of safety and also to get maximum re-use from the number of units needed. Unique methods of rolling, sliding and lifting entire sections of sectional shoring from one pour area to another are often worked out at this stage too.

The complete story on PS Co. Shoring can be found in Bulletin PSS-33 "Modern Shoring for Concrete Construction". It's available at no obligation from the Patent Scaffolding Co., Inc.

To help you with your scaffolding and concrete shoring methods, PS offers a complete nation-wide engineering service available to you locally. See the Yellow Pages in your phone directory for the nearest Patent Scaffolding office or representative that sells and rents "Gold Medal" Scaffolds.



SAFE WORKING LOADS for "Trouble Saver" Sectional Steel Shoring vary according to spacing between 5'-wide frames, distance between rows, and position of stringers on frames. This prefabricated, engineered shoring will handle the heaviest loads and provides a clean, neat installation. It is easily adaptable to all types of construction: flat slab, slab with drop head, pan joist, poured arch and beam.

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WASHINGTON OBSERVER

The official Administration word confirms the uptrend in construction spending by federal agencies for the current year. The Bureau of the Budget this week summed up the spending outlook after Congress finished its work.

About every major category will show higher spending this fiscal year with the exception of military and atomic energy construction which will be at about the same level as last fiscal year.

Highway spending for the year ending next June 30 will be up $410-million to $1.1-billion.

Flood control, reclamation and navigation will be up more than $150-million to more than $824-million.

Airports will be up $57-million to $205-million.

Construction increases go along with other higher spending figures right across the board. But the increased government income from taxes makes it possible for the Administration to predict a balanced budget again this year.

•

Lower down payments to help home builders lift the housing decline are ruled out for the foreseeable future. The Administration has taken a stand.

Housing Chief Cole asked that down payments be dropped 2%—which would have the effect of erasing the increase of a year ago. Then, FHA increased minimum down payments to 7% from the 5% level; at the same time, VA stopped approving no down-payment sales and required a minimum of 2% down.

The Council of Economic Advisers turned down Cole's request in view of the new spurt of inflationary fear that's the dominant economic theme in Washington now. Actually, Cole's request never had a chance; officials say that with the economy and construction both booming, the housing decline is nothing to worry about. In fact, they figure that if and when a decline occurs—either in construction or in business generally—they will be in a better position to ease up on housing to bring business back up.

The ruling against easing housing terms will stand through election. Odds are against any turn around, for instance, as a gesture to garner some extra votes at the polls, even though the Democrats hit the issue hard.

•

More accurate estimate of cost of the new highway program will come from use of a new manual Bureau of Public Roads is issuing to the states. It will require state officials to estimate from actual design and location of the specific interstate mileage. The only official figures available up to now were compiled in 1954. They were based largely on average cost per mile of estimated mileage of different kinds of highway, without regard to actual locations and construction quantities that are involved.

The manual is important since allocation of federal funds beginning with fiscal 1960 will be based on the cost estimates which the new procedure will produce.

The new method will be given a quick trial run by three states that worked closely with the bureau in preparing the preliminary version—Massachusetts, Missouri, and Washington.

They're expected to have a report back in about a month or so, using the procedure on a cross-section of their interstate mileage.

Final form of the manual is expected around Nov. 1 when state highway officials will have had a chance to discuss it at regional meetings called by Bureau of Public Roads officials.

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Urban Road Report . . .

Cities like Chicago push ahead on standing plans, while experts try to unscramble new highway law. Result is a . . .

Slow Start for City Expressways

The vital urban expressway part of the new multi-billion dollar federal aid highway program isn't nearly as easy to activate as are the projects now getting underway on the state and interstate networks.

A spot check ENR survey finds considerable confusion as to how urban highway expansion can best be carried out within the framework of new federal legislation.

The confusion and the delay aren't wilful, or because anyone is consciously dragging his feet. Rather they come from honest need for careful consideration of the federal law itself, and the extremely complex financial and other problems posed by that law. The delay isn't going to hold back anything now building—but it will slow the influx of new funds and expansion of existing programs.

You can boil down the causes to these:

- Considerable misunderstanding as to which roads are part of the interstate system—and thus eligible for 90% federal aid—and which will continue on the former 50% federal aid basis.
- Delays in allocation of state shares of federal funds to specific urban projects.
- City financial difficulties.

• Spectacular, but slow—The great, clean-cut expressway systems, with their complex structures and vast effect on the physical appearance of an urban area, are far and away the most spectacular part of the $32.5 billion "grand plan" for highways (ENR July 5, p. 23). Many such systems have already begun to cleave through New York, Boston, Chicago, San Francisco.

Although incomplete, they are already a working part of the cities' daily life.

Because such projects are spectacular, expensive, at the centers of huge concentrations of voters—and urgently needed—and much planning has already gone into them, it would appear that the new federal money would go into the urban roads very quickly.

But ENR's survey of many U. S. cities found one general pattern—that of problems and consequent delay in working out details.

For instance, in Ohio, the 10 largest cities and the state were squabbling over who should put up the 10% matching funds for the urban work; in Los Angeles city officials were marking time until the state worked out local shares; in New York, a complicated city—Triborough Bridge & Tunnel Authority-state arrangement continued to function pending some final determinations.

• What's "interstate"—Key to the whole picture is understanding of what Congress meant in the wording of the new highway bill.

The word to watch in the lengthy measure is "connect"—the new system shall ". . . connect . . . centers of population and . . . industry."

That means that the interstate system is to be a closed network. There will be no "stub ends" sticking out of it, excepting extremely short pieces to provide connections to communities otherwise bypassed.

Thus any roads within an urban area that connect two pieces of interstate highway—for instance, a road connecting the Bronx-Whitestone Bridge and the Brooklyn Battery Tunnel in New York City (thus providing a connection from north to south through the city)—can come within the interstate system, qualifying for 90% aid.

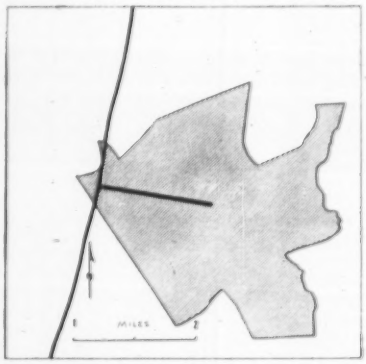
But a road that extends outward from the city to a suburban area is not eligible—unless it is already a part of the federal primary system (designated as a U. S. route).

Toll facilities themselves may be included in the interstate system and qualify for the 90% aid—but only if the facility is to be made free as soon as obligations are satisfied. Approaches to those facilities may be included as "interstate" on two conditions: either that the approach can be used, free, by local traffic, or if there is no exit before the toll booth, that the bridge or tun-

. . . Slow start for city expressways

Urban routes — part of interstate system — connect other parts of network into continuous whole.

Small cities may be bypassed completely, with only short access connections.



ned be made free on payment of indebtedness.

If a town is bypassed completely—where the existing federal-aid road goes through the town—the new bypass receives 90% aid, but the old road continues to receive 50% aid.

• **Corollary effects**—From this, then, the course of action boils down to these steps: the federal government must make specific allocations and commitments to the states; the states—acting as agents for their cities—must determine allocations to specific projects; the cities can help by making suggestions, but in the end must sit on their hands until the state has acted.

To complicate the matter further, there are several knotty problems:

• Some sections of a road eligible for 50-50 aid may be eligible for 90-10 aid—if those sections form part of a connecting loop.

• Since the states can reduce their contributions of matching funds on some sections eligible for 90-10 aid, more money may be available for the 50-50 program. That's so, for instance, in Baltimore, where work is expected to start soon on some urban expressway work originally scheduled for years ahead.

• Some of the money that the states "save" on their interstate work may also be available to cities (and counties and other subdivisions) for secondary and other road aid.

Thus, one effect of the huge federal contribution will be widening ripples of influence—all of which must be considered in the overall planning at the city and state levels.

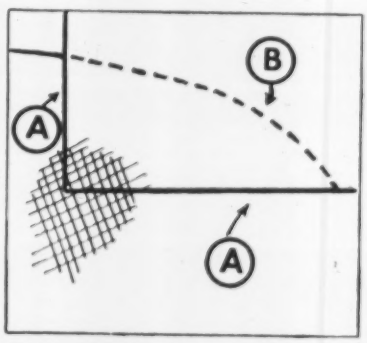
• **The money**—As of last week, more than $1 billion worth of allocations to the states for the interstate system had been approved by the Bureau of Public Roads.

Much of this money, however, will go for work in more or less open country—where planning had been completed, and only funds were awaited for actual contract-letting.

Unfortunately, that's not nearly the whole story.

New York City affords an excellent example. City and state officials know very well where they want the city's portion of the interstate network to go. BPR has approved more than half the routes, much of the right-of-way has already been purchased and a good deal of the engineering is already finished. In fact, some sections are either under construction, or ready for contract letting.

But the state has yet to announce exactly how much of an allotment will be made toward the city projects. The state, in its turn, is beginning to worry about finding funds quickly to match the federal funds in large enough chunks to get a substantial program going. And so state officials are eyeing the month of November—when voters will be asked to approve a $500 million bond issue (which they turned down a year ago, when it was set at $750 million) to meet the state's share.



WHAT HAPPENS, financially, when a small city is bypassed: old road (A) through center of community, continues to get 50% federal aid; new bypass (B) is built with 90% federal contribution.

Meanwhile, the city-acting through the independent Triborough Bridge & Tunnel Authority—is proceeding to purchase right-of-way. Under state law, the city pays half of the cost to the state of land acquisition—city officials figure that this share alone will amount to about $126 million over 13 years. By the same figuring—released by Robert Moses, City Construction Coordinator—the state would spend a total of more than $850 million. This total of nearly $1 billion, remember, is to be spent in New York City alone.

And within the city there's debate too as to just which projects should be pushed first, so as to get the best use of the money available. For that reason, the long-proposed Narrows Bridge (ENR) itself won't be built under the federal program—its roughly $400 million cost will be financed by toll-backed bonds—but the approaches to the structure will be financed under the 90-10 formula. The 400 million thus "saved" can be applied to other phases of the general program.

The situation in Ohio is somewhat similar—excepting that there more or less definite fund allocations have been made. But the state has said that it wants its 10 largest cities to contribute the 10% of the interstate net costs (land acquisition again) and the cities are objecting violently. Meanwhile, the state has arbitrarily assigned nearly half of the $1.8 billion aid it will get

over the 13-year period of the program to rural and smaller urban areas.

New Orleans, also, is caught in the same web. State and city officials are uncertain of how much of the cost of the $65 million Mississippi River Bridge and the more than $140 million urban expressway program—some of which has already gone under construction—can be shifted to the 90-10 financing basis. High right-of-way costs in the city, and expensive construction on the uncertain ground on which the city is built, complicate the picture.

• **Other problems**—Some cities—notably Boston and Los Angeles—aren't worried financially, since their contributions to state and interstate routes are virtually nil.

But, although both communities have already started expressway construction, and both are hopeful that the new money will substantially speed their construction programs, neither can do much but wait for the state to break down allocations to city-sized chunks. Boston, with city planning dating back to 1934, has high hopes for a new bridge over the Mystic River, another tunnel under Boston Harbor, and help on its central artery through the heart of the old city. San Francisco looks for faster progress on its planned Embarcadero Freeway (despite a local squabble over its location), and further connections to its transbay bridges.

And to Jacksonville, Fla., the federal program appeared to be an unadulterated boon. With passage of the bill, the state highway department agreed to "lend" $8 million to the Jacksonville Expressway Authority, to tide the authority over until it can bring an approved $70 million bond issue to market.

• **Bright spot**—Best off in its efforts to get the urban program off the ground seemed to be Baltimore—where a year-old bond issue will supply ample matching funds, and planning was well under way. George A. Carter, public works director, said that before the federal legislation was passed, some of the city's program could not have been completed for 50 years—but now the completion time on much of it will be brought within the 13-year period of the bill.

Happily, city and state officials were already assigning priorities to their projects—first priority going to the Jones Falls Expressway, knifing into the center of the city from connections to the north, next in priority is a connection from the Jones Falls to the Baltimore-Washington Parkway. Following in order will be inner and outer loop roads to circle the city, and various connections to them.

• **Chicago sees other problems**—Biggest single problem facing Chicago's traffic planners is not immediate construction—but what to do with an estimated 20,000 vehicles a day that will pour into the metropolitan area from Indiana's soon-to-be-completed turnpike. When the now-building, $88 million Calumet Skyway, is completed more than a year from now, the problem may be solved. Meanwhile, though, the city is going to have to handle this added traffic on already choked streets.

Overall, however, Chicago is going ahead with plans for four major interstate routes (see map on P. 21). State officials have announced that Chicago will receive about half of Illinois' initial allotment—about $72 million—for improvement and construction within the city. No one seems to anticipate any unusual trouble in acquiring right-of-way. And surrounding Cook County looks upon the federal appropriation as a major windfall—a $240 million county road bond issue approved a year ago can now be used for other than interstate routes.

• **Real estate**—With the increasing impact of the urban highway program, another significant fact is beginning to appear in the cities: changes in real estate value.

The net effect seems to be to the good. It is true that taking of land in wide swaths for the expressway chops up a lot of taxable land that might otherwise have appeared on the tax rolls as commercial, industrial or residential property. Despite some losses in real estate in areas of business dependent on roadside commerce, many areas have increased in value, due to improvement in appearance and service provided by new roads.

And easy motor access has given a new shot in the arm to the development of multimillion dollar shopping centers in urban areas.

On the interstate system...

1,000 Miles to Parcel Out

That extra 1,000 miles of interstate highway network that Congress threw into the $32.5 billion highway bill it approved early in July (ENR July 5, p. 23) was beginning to be a source of worry to federal officials this week.

What Congress did was to authorize a 41,000-mile interstate system, instead of the 40,000-mile system that had been the basis of all estimates by the states and federal agencies. And the lawmakers carefully refrained from designating just where those extra 1,000 miles should be located—leaving that point for later determination.

This week, reports from Washington said that requests from the states for additional interstate mileage were coming in to the Bureau of Public Roads almost daily. One of the latest proposals was one from John O. Morton, New Hampshire highway commissioner, who plumped for a 250-mile, $200 million superhighway system to extend from Portland, Maine to Albany, New York, through Vermont and New Hampshire, and for extension of the system to the Canadian border, northward from Franconia Notch, N. H.

Almost forgotten by many is the fact that the 40,000-mile system as it is now to be built has been set as to general location since 1944.

In that year, the Federal Highway Act provided for designation of a "national system of interstate highways" of 40,000 miles, to connect centers of industry and population for commerce and defense. Subsequently (1947) such a system was approved by joint action of the states and the Bureau of Public Roads, to include 37,700 miles of approved routes, with the remaining 2,300 miles held in reserve for designation of additional arterial routes in urban areas, and late in 1955, the additional 2,300 miles were approved.

The routes approved in these actions are essentially the interstate system envisaged in the 1956 highway act. However, as originally laid out, they were rather loose connecting lines drawn from one major city to another, with possibly a third fixed point added between the two main centers. The states and BPR are now engaged in "pinning down" the locations more exactly.

When Congress came up with the 41,000-mile figure, there was some surprise.

One rumor was that the extra 1,000 miles went into the bill to satisfy Colorado, which wanted a direct route across the Continental Divide to connect Denver and Salt Lake City.

As of last week, BPR said it hadn't attempted to tabulate or select the requests that have come in—planned to let them accumulate until mid-September, when it will tackle the allocation problem.

Rapid Transit Plan

New Jersey-Philadelphia link wins an endorsement

The Delaware River Port Authority has endorsed construction of a $242-million rapid transit system linking southern New Jersey with central Philadelphia.

Included in the plan is a tunnel under the Delaware River and an Arch St. subway terminating near the Pennsylvania Railroad suburban station at 16th St.

The authority recommended adoption of the plan to Gov. George M. Leader of Pennsylvania, Gov. Robert B. Meyner of New Jersey, legislative leaders of both states and a New Jersey legislative committee studying transportation problems.

It said the line should be put into operation as quickly as possible, but declared that Pennsylvania and New Jersey would have to contribute $128.4 million to make the proposal a reality.

The transit plan originally was recommended in an engineers' survey published last March by Parsons, Brinckerhoff, Hall and MacDonald. The $242-million cost estimate made by the engineers includes construction, rights-of-way and equipment, but not finance charges and interest. Inclusion of financing charges would necessitate a bond issue of from $282 to $300 million, according to the authority. The smaller amount, it said, would represent savings that could be made if the two states would guarantee the bonds.

The authority discounted the possibility of increasing tolls on the Benjamin Franklin, new Walt Whitman and Tacony-Palmyra bridges to 35 cents. It pointed out that this would not bring in enough revenue to make the transit project possible. However, total earnings of the three bridges plus revenue from the proposed transit system would support an authority bond issue from which $113.6 million could be allocated as a partial payment toward the $242 million. To make up the difference, New Jersey and Pennsylvania would have to contribute the $128.4 million.

Bidders in Force

Illinois Turnpike opening attracts keen competition

Unusual contractor interest in toll road construction was evidenced last week in Chicago when the Illinois State Toll Highway Commission opened bids for the first multimillion dollar construction contract in its $415 million, 193-mile toll road program. Competition was keen as reflected by the bids submitted on the 114 contract items.

A low bid of $3,026,100 was submitted by Public Constructors, Inc., of Camden, N. J., for a 4.8 mile section of four-lane divided highway north of Rockford on the route running northwest from Chicago to the Wisconsin State line near Beloit.

Second low bid was for $3,257,000, nearly 8% above Public Contractors' bid. But the average of the next five bids was only 2% above the second low bid. They had a total spread of only $70,000; ranging from $3,298,000 to $3,369,000. The highest of the 18 bids received was $4,030,000. Four of the bids were submitted by two or more contractors bidding as joint ventures, making a total of 26 contracting firms engaged in the bidding.

An estimated 45 contractors, materials suppliers and others interested in the project were at the opening of bids. The 30-minute affair was held in an assembly room of a Loop hotel; since the toll commission's quarters weren't large enough to accommodate the crowd.

To expedite and simplify proceedings on the bidders' names, address and total amount of bid were read as each sealed bid was opened. Then, after all bids had been opened, the apparent low bid was determined (Public Constructors, Inc.) and its unit prices read for all 114 contract items.

The contractor will have 440 calendar days to complete the 4.8 mile section of toll road. The work includes grading, drainage, paving and erection of five precast concrete bridges.

This was the first of 51 construction contracts to be advertised for the turnpike project, according to Geo. L. Jackson, chief engineer of the Illinois State Toll Highway Commission.

Work Begins at Ice Harbor Navigation to Be Curtailed

Construction of the first-stage cofferdam for $135 million Ice Harbor Dam on the lower Snake River in Washington was begun last week by the Guy F. Atkinson Co., San Francisco.

It signalled the start of a stepped-up construction schedule calling for first power on the line by 1961. The faster pace has been approved by navigation interests which must curtail barge traffic during the construction period.

Bids on major work on the dam itself will be opened in Walla Walla District Office of the Corps of Engineers Nov. 27.

This call will involve building the dam past midstream and the powerhouse superstructure.

In May 1958, the Corps plans to call for bids on the second phase work covering the remainder of the dam and what may be a 102-ft-high navigation lock. Third phase work will cover installation of generating equipment and finishing off of low spillway sections, and is planned for call about three months after the start of Phase 2 contracts.

Constructor's Fleet Hits Great Salt Lake

This 2000 cu yd drop bottom barge is one of six being assembled and launched in Great Salt Lake at Little Valley, Utah. The 250-ft vessels will be used by Morrison-Knudsen to handle the 31,500,000 cu yd of fill required by Southern Pacific's $49 million dry land road bed that will cross Great Salt Lake. (ENR Mar. 22, 1956, p. 24).

Loading of barges will be accomplished by two mile long conveyor now under construction.

Cost of Competition

$60 million port program is urged for Philadelphia

An engineering survey recommends that Philadelphia spend $60 million for port facilities to meet competition of Great Lake cities opened to world trade by the St. Lawrence Seaway.

This recommendation is included in a 235-page port progress report prepared for the city after an 18 months survey by James C. Buckley, Inc., New York City.

According to the engineers report, general cargo capacity can be increased by 474,000 tons a year through rehabilitation of eight city-owned piers at a cost of $7.6 million. Although Philadelphia now ranks as one of the major U.S. ports the overwhelming portion of its activity is in bulk products such as petroleum and ore. The survey stresses the need for enlarging facilities for general cargo.

The $35,000 Buckley report also proposes:

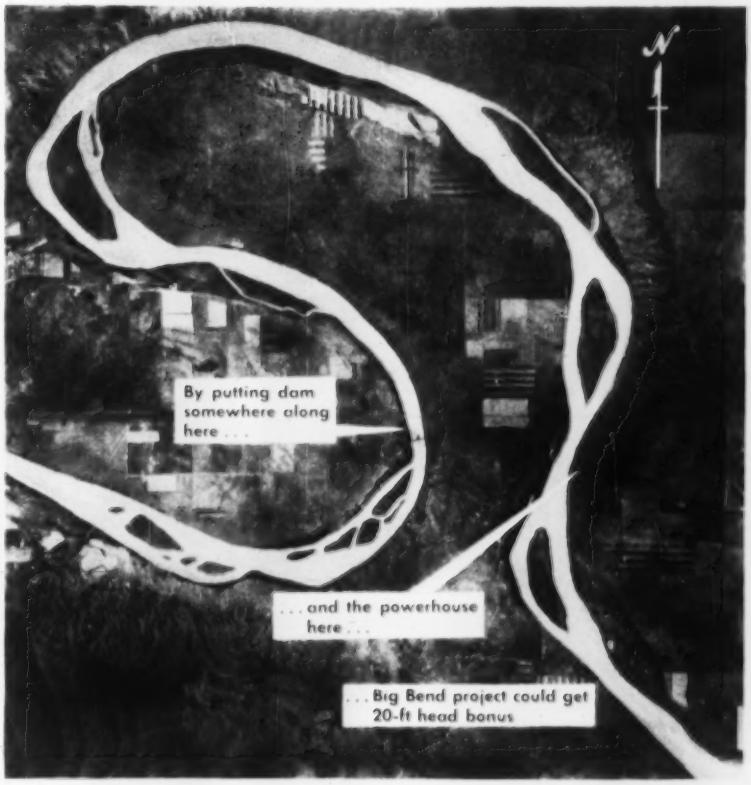
- A long-range program involving rehabilitation of five groups of "distressed and derelict" piers along the Delaware River at an average cost of $29 per ton capacity. Development of all five areas would add 1,800,000 tons of general cargo handling capacity at a cost of about $52 million.
- A master plan for waterfront development. This would involve creation of the post of deputy or assistant director of commerce with responsibility for port promotion, and establishment of a plan for financing waterfront development.

The report was critical of both the city and private pier operators. Fredric R. Mann, Director of Commerce, says the survey shows the results of years of waterfront neglect. "But what is more important," he declares, "is that the report is optimistic in pointing out benefits that the city and port can reap from an aggressive program of development."

Canadian Hydro Expansion Approved for Early Start

Application by British Columbia Electric Co. to add 240,000 kw of capacity to its 186,000-kw Bridge River plant has been approved. Construction is expected to start this year.

The $43 million expansion will involve a 2½-mi tunnel into Seton Lake and a 150-ft-high dam downstream from existing 282-ft Lajoie dam in addition to the power plant. The Bridge River empties into the Fraser River 110 mi northeast of Vancouver. The new dam is located 20 mi from the mouth.



Big Bend Dam Site Studied

Big Bend Dam for the Missouri River in South Dakota came out of the future file and into the active stage last week.

The dam's changed status was signaled when the Omaha District office of Army Engineers assigned a team headed by William T. Black as project manager to make preliminary studies. Black is a structural engineer who had a role in designing the other dams—Fort Randall, Gavins Point, Garrison and Oahe—now built or being built across the Missouri.

Preliminary work on the dam followed Congress' action in appropriating $150,000 of planning money for Big Bend.

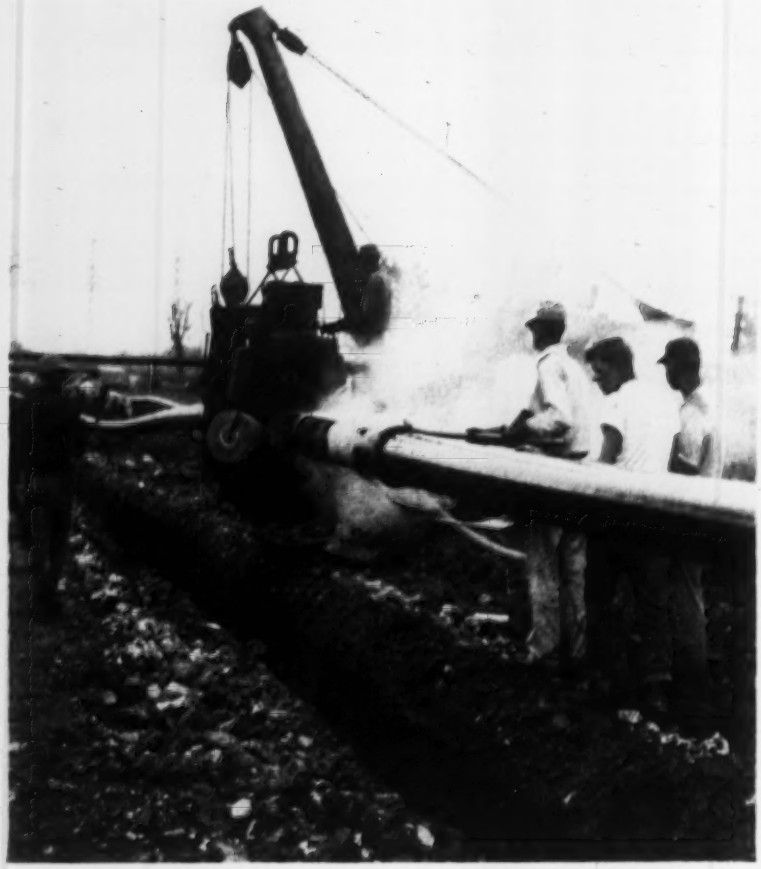
Although work is now under way on design, construction start on the dam is two years away, according to J. O. Ackerman, chief of the engineering division in the Omaha District office. Field studies must be worked out for each of several tentative sites.

Army Engineers have four sites to investigate. All are near the distinctive geographical feature below Pierre that gives the area its name. The Big Bend—the old "Le Grand Detour" of the fur trade days—is a loop in the river 21 mi around and approximately a mile wide at its neck. Its location is between Oahe and Fort Randall Dams.

Two of the tentative locations would make use of the bend itself. Because the river falls a foot each mile, the river on the downstream end of the loop is 20 ft lower than on the upstream side. If water were led from a dam on the upstream side of the loop to a powerhouse on the lower side, designers would get a bonus of the added head.

The other sites to be investigated are located downstream from the loop. They would be conventional in nature. The locations were suggested by indications of improved foundation and soils conditions and also by the smaller spillway that would be required. The dam site utilizing the loop would require a mile long chute of reinforced concrete.

Power output of the dam is dependent upon the plans. However, a preliminary estimate indicates that power may be double what was originally thought. Originally Army Engineers talked in terms of 120,000 kw generating capacity for the project. Now they are thinking in terms of an installation of 220,000 kw.



FAMILIAR TECHNIQUES of laying oil pipeline are in evidence as crews working at a 2½ mi per day clip put . . .

Coal Pipeline on Home Stretch

The nation's first commercial coal pipeline—pushing close to its full 108-mi length—will soon be ready for comparison with conventional means of coal transport.

The line is part of a $12-million mine-to-powerhouse scheme (ENR Aug. 4, 1955 p. 38) to bring coal from the Pittsburgh-Consolidated Coal Company's strip mines in southeastern Ohio to a steam power plant, owned by Cleveland Electric Illuminating Co.

The project now under way is the brain child of Pitt-Consol study and research—six years of it—at a cost of almost $2 million. The motive force behind the study was economic—it was figured that normal freight costs for hauls in excess of 100 mi made up 50% of the consumer price. Delving deeper into the prospect of hydraulic transport of coal, engineers learned that a patent for the process had been granted back in 1891 and that the inventor's model had won a World's Fair prize with the citation that the scheme was "destined . . . to become the carbon thoroughfare for the transportation of the motive power of the ages." Spurred by this "voice from the past," the investigation went into pilot stages with a Ford, Davis & Bacon feasibility study.

Six years later, from extensive investigations, information as to velocity, pipe size, erosion and corrosion characteristics, head loss, and myriad other variables was obtained—resulting in a design which features:

- A slurry-preparation plant located at the mine, which readies the coal for pumping.
- Three pumping stations—one at the mine site and two more to act as boosters along the 108-mi line.
- A heavy-wall, high strength welded steel pipe of 10¾ in. dia, treated with a "secret" corrosion inhibitor, to carry 1,200,000 tons per year at a velocity around 5 fps.
- Dewatering and processing facilities at the power plant end of the line, to cost about one-fifth of the overall outlay for the project.

• Out of the mine—Screens and crushers grade the coal as it comes from the mine. A storage problem arose from the fact that the slurry preparation works must handle over 300 tons per hour during the period when coal is coming from the mine, while the pipeline—designed for round-the-clock operation—takes only 150 tons per hour. This necessitated the construction of a battery of storage ponds. The final slurry is a 50-50 mixture by volume as sent out of the preparation set-up.

• Into the line—The slurry is sent into the pipeline at 1,000 psi by high head piston-type pumps driven by electric motors. The line itself, started last September, is moving at about 2½ mi per day by oil pipeline construction techniques. Since characteristics of the slurry being carried made heavy-wall pipe a must, some interesting welding was involved—16 passes were used on the high strength pipe.

Soil cover for the line is a healthy 4 to 5 ft to bar winter worries, and the pipe is given a protective enamel coating and glass cloth wrap when installed.

The two booster stations are located at 30-mi intervals along the line. Each is provided with a standby pump to insure constant throughput, and automatic control is so arranged that the preceding station will pump through booster stations in case of power failure.

• Out the other end—Most of current construction on the project is taking place at the northern end of the pipeline, where coal drying and processing facilities are being built. Incoming slurry will first be thickened to about 60% solids (by weight) in a pair of 90-ft thickeners. The thickened slurry then goes to disc-type vacuum filters which give a filter cake with only 20% moisture. These are weighed and sent to storage, eventually winding up in the regular fuel bunkers of the power plant. Water used in the line will pass through flocculation tanks after filtering, as a final clean-up. A knotty problem—that of dovetailing the complex processing works into the power plant—was complicated further by the need for an eye to expansion of one or both set-ups. Close cooperation of the CEI engineers aided in the choice of a satisfactory layout.

• Good deal, except for railroads—Financing of the $12-million scheme—which will supply 80% of the coal for CEI's Eastlake station—is based on a 15-year contract between Pitt-Consol and the power people. CEI will buy 1,300,000 tons per year, paying in addition a portion of the capital cost of the venture. At the end of the period, the cost will have been paid off

and the power company will have the option to acquire the line permanently.

To Pitt-Consol, the facility means a guaranteed good customer for the next 15 years. To the power concern, it means a chance to save on the cost of power generation. And it may mean a break for the public, who stand to gain if the saving is passed on to them.

Contractors for the pioneer pipe project are Williams Brothers Co. on pipe and Poling & Bacon Co. on structures. Supervision is being handled by Ford, Bacon & Davis consultants. Much of the original work was handled for Pitt-Consol by engineers V. D. Hanson and T. J. Regan.

Tollroad Troubles

Penn pike's maintenance conflict comes up again

The question of who will run the Pennsylvania Turnpike popped up again last week.

Gov. George M. Leader—trying to clarify the muddled maintenance issue—said that the State Highways Department will supervise maintenance of the turnpike without taking over the Turnpike Commission's 500 maintenance employees.

Governor Leader's announcement came after Highways Secretary Joseph J. Lawler said he had given no thought to taking over turnpike maintenance duties. According to the governor, the highways department could supervise pike maintenance without actually taking over the duties—that is, by setting up the machinery to meet legal requirements without transferring personnel.

The governor's position was regarded as an about-face on the legal opinion of Attorney General Herbert B. Cohen. Cohen's recent ruling—which stripped the toll road agency of much of its powers—said the department has jurisdiction over all turnpike plans, maintenance and right-of-way acquisition (ENR, July 26, p. 17).

In a statment to the Turnpike Commission, Lawler declared that at no time prior to issuance of the formal opinion was any thought given to the highways department taking over the turnpike maintenance force. "As far as I'm concerned," he said, "it is a responsibility of the commission—and always has been."

In another move, however, Lawler increased his command at the pike agency, where he is an ex-officio member. This occurred when the commission adopted resolutions giving the highways department further responsibility for approving future turnpike extension locations, right-of-way purchases and contracts.

A Wood-Arch Roof With a Claim to Fame

A sports arena now under construction in Commack, on New York State's Long Island, is said to be the biggest building yet framed with glued-laminated wood roof arches.

A barrel roof 275 ft long will be supported by 12 semicircular 3-hinged arches, spanning 205 ft and rising 65 ft at the center.

Additional low-roof areas at each end of the arched roof will bring the total length of the arena to 350 ft.

The ten interior arches are 9 in. thick, with those at each end 5 in. thick. Length around the curve is 240 ft. All arches have the same profile, with variable depth reaching a 46-in. maximum. Roof sheathing will also be wood.

While the arena length makes it tops in area for glued-laminated wood arch construction, the span record is still claimed for the 242-ft arches supporting the roof of the Jai Alai Fronton, Palm Beach, Fla. (ENR Mar. 29, p. 38).

Architect for the arena is James Van Alst, Centerport, N. Y.

The arches were fabricated by Unit Structures, Inc., Peshtigo, Wis., and erection was carried out by Roof Structures, Inc., of New York City.

Utility Indicted for Lacking State Hells Canyon License

On top of its trouble in the federal courts over start of construction on the low-dam Hells Canyon scheme, Idaho Power Co. has been indicted by an Oregon state court grand jury for failing to obtain a license from the Oregon Hydroelectric Commission.

Recently, U. S. Supreme Court Justice Hugo Black required Idaho Power Co. to put up a $3 million bond freeing the federal government of obligation in case the FPC license for Brownlee Dam, where construction is proceeding, is nullified. High dam advocates have a nullification suit pending.

The stakes aren't nearly so high in the state court battle: maximum penalty is a $1,000 fine.

End of the Road

Michigan drops plans for 500-mile turnpike system

For all practical purposes Michigan's Turnpike Authority went out of business last week.

A statement sent to the Aug. 21 meeting of the authority by State Highway Commissioner Charles M. Ziegler declared that "as of now toll roads are unnecessary to the future economic development of Michigan."

The authority adjourned without fixing a date for another meeting, and it is generally agreed that the session is the last the group will hold. A formal resolution adopted at the end of the meeting cut the staff to a mere token force and reduced monthly expenditures from approximately $5,000 to about $2,000.

So far the authority has spent the $500,000 originally granted to it and has run through another $21,000 of a $150,000 grant made by the state legislature about six months ago.

Blueprints for the proposed 600-mile turnpike system went before the Michigan legislature last February (ENR, Feb. 9, p. 28). At that time the authority asked that a $300-million state-backed bond issue be put before voters in November to help finance construction. As planned, the system would have provided 500 miles of toll expressways from the Ohio line to Mackinac and from Detroit to Chicago.

Members of the authority—appointed on a bi-partisan basis by Gov. G. Mennen Williams—have accused Commissioner Ziegler of blocking the turnpike by planning free roads, built to turnpike standards, almost alongside the proposed toll routes.

Toll Road Safety

Turnpike to get barriers only on curved stretches

After more than a year of study the Pennsylvania Turnpike Commission has decided against construction of steel medial barriers on straight stretches of roadway.

Three out of four members turned down recommendations by the commission's safety director for construction of 40 miles of the center-strip railing at a cost of some $1 million (ENR, Dec. 1, 1955, p. 26). The commission returned the plans to its safety division with a proposal that barriers be scheduled only for curved sections.

Last November—at the suggestion of Gov. George M. Leader—the commission laid out a plan to construct 40 miles of additional steel barriers this summer plus 60 more during 1957. The 36-in.-high barrier was to consist of steel strips strung between steel I-beams that are 12 ft, 6 in. apart. At present there are only 20 miles of such barriers on the 408-mile cross-state road, most of it along curved sections in eastern Pennsylvania.

Several bills were introduced in the recently-adjourned session of the state legislature to force the commission to build more steel barriers but none was approved. At that time the commission introduced statistics showing that only 8% of all turnpike accidents resulted from cars hitting or crossing over the median strip.

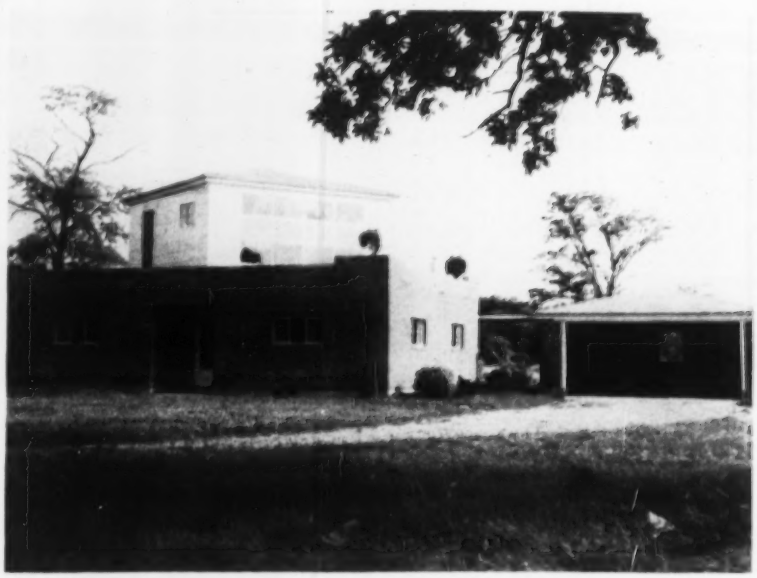
Last Leaflet Marks End of City Garbage Grinder Push

The city of Detroit's endorsement of garbage grinders—an 18-month "educational campaign" of advertising and letters to homeowners—came to an abrupt halt last week.

Reason for the move, according to Glenn L. Richards of the Department of Public Works, is that the idea of home garbage grinders has been thoroughly sold to the public. Detroit has a city ordinance requiring that all new homes be equipped either with a grinder or an incinerator. This ordnance was pointed out as sufficient basis for dropping the campaign, which has been carried on by a mayoral committee.

Richards insisted that the decision to end the program is not the result of complaints to the Better Business Bureau. The bureau has received about 100 complaints from householders concerning unethical tactics by grinder salesmen—high pressure salesmanship and misrepresentation. Some of the salesmen assumed the role of city surveyors, while others urged their product upon customers with the comment: "A law is going to be passed to make you buy and you won't get this good price then."

Present estimates indicate that 50,000 homes in Detroit now have garbage grinders—200,000 are still unequipped.



Revolving Room Tops Out New Home

A revolving second-story room which can be controlled to follow either sun, moon, shade, or prevailing breeze, tops out a new-type home in New Albany, Ohio.

Called "scenaramic", the house features a motor-driven 18 x 18-ft living room which revolves in either direction on 24 wheels on a circular track. It can be automatically timed to track the sun or moon across the sky.

In addition to the living room, the house offers three bedrooms, two baths and a kitchen on the ground floor. The living room is reached by a spiral staircase in the center of the house.

Components for the novel home—track, motor, circular staircase and wiring—will all come in a patented kit to retail at $1,500. Clark Ramney, owner and designer of the device, has applied for patents, and Agri-Tect Co., Johnstown, Ohio, will fabricate and assemble the kits.

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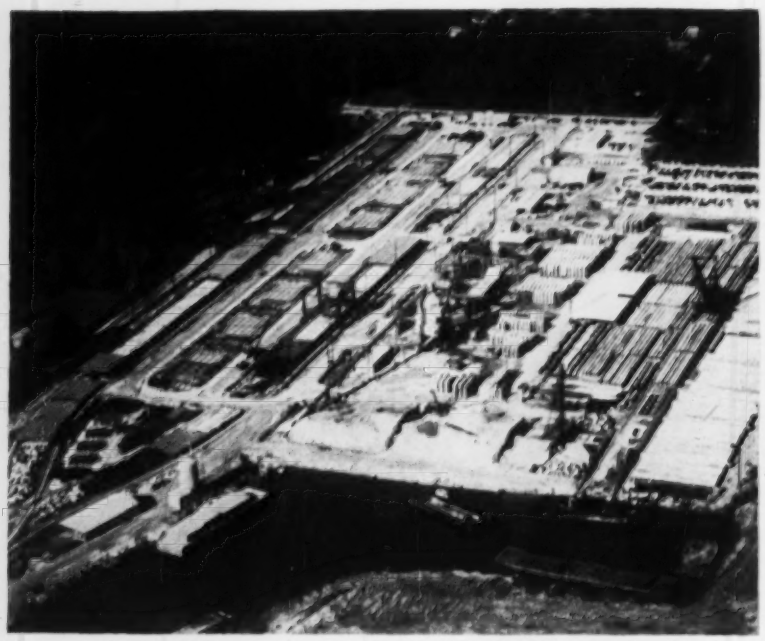
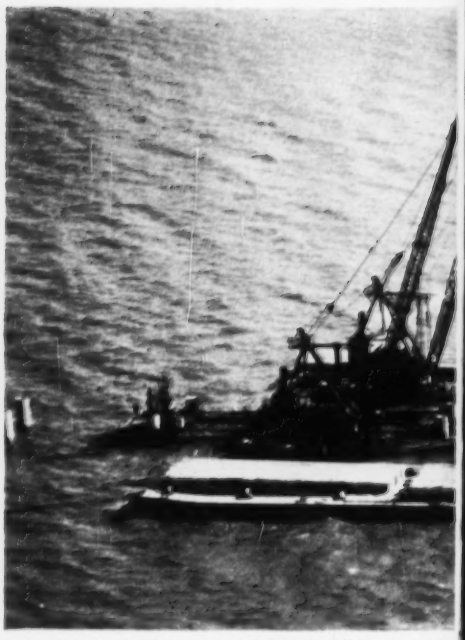
Marion, Ohio





Mass production of prestressed concrete bridge decks and piling in a huge casting plant on shore (left), plus big piledriving rigs and other floating equipment (right) resulted in speed and economy in building . . .

A 24-Mi Bridge Across Louisiana's Lake

Opening of the 24-mi toll bridge over Lake Pontchartrain this week will be a significant milestone in New Orleans' Greater Expressway System. For the motorist bound to or from that waterbound city it means a saving in both time and travel distance. No longer must he skirt Lake Pontchartrain on U. S. Highway 11 to the east (see map) or U. S. 51 to the west. Instead, for an average toll of $1 per passenger vehicle he can drive directly across the Lake in a matter of minutes on the 28-ft roadway of a concrete causeway.

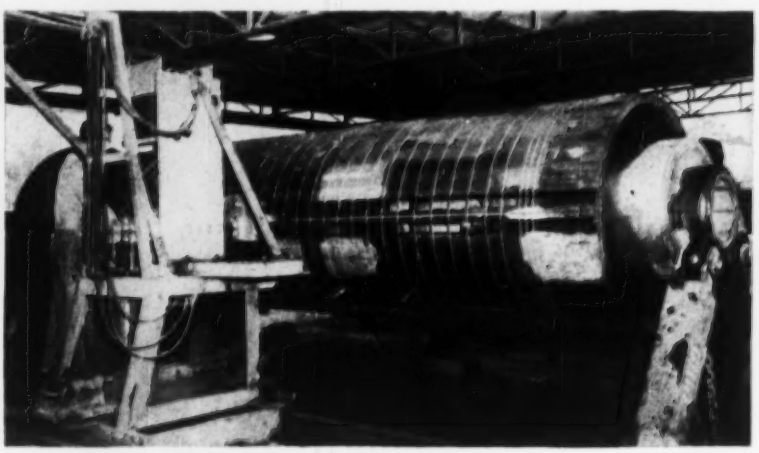
Using this shortcut, he'll save 29 miles and approximately 40 minutes travel time getting to downtown New Orleans.

At the southern shore of the Lake, motorists will be able to continue on through New Orleans on improved expressways now being built and across the Mississippi River on a $65-million cantilever toll bridge to be completed in 1958 (ENR June 21, p. 36).

• **Three needs**—The overall expressway system is designed to fill three needs: To create a thruway or interstate highway to points north, south, east and west; to improve crowded traffic conditions in the Greater New Orleans area (ENR June 16, 1955, p. 49); and to provide additional living space for the overpopulated area of Metropolitan New Orleans.

• **Bold venture**—Completion of the $46-million causeway project will mark

STRETCHING ACROSS Lake Pontchartrain from Mandeville on the north shore to a connection with the Greater New Orleans system of expressways, the 24-mile toll bridge will be a time saver.



FOUR STEPS in making piling: Reinforcing cages of spirally-wound welded wire were fabricated under cover . . .

Pontchartrain

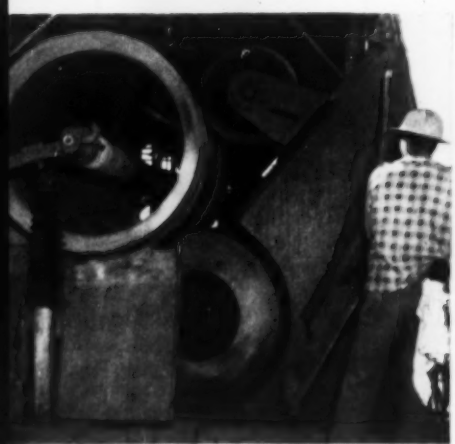
the end of a 100-year-old dream of bridging wind-swept Lake Pontchartrain. It also is a tribute to those who conceived, designed and constructed it. For theirs was a bold venture, requiring unusual foresight, ingenuity and resourcefulness. The 24-mi toll bridge was completed in 19 months—four months ahead of schedule.

• **Precast and prestressed**—In designing the 23.83-mi-long structure, Palmer and Baker, Inc., consulting engineers, Mobile, incorporated both precasting and prestressing, in the interest of economy and speed of construction.

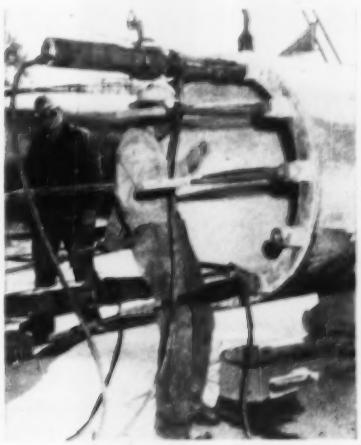
Mass production in the casting yard and repetitive construction operations as the bridge was erected across the lake also helped keep costs down and speed the work.

The bridge was built by the Louisiana Bridge Co.—a joint venture of Brown & Root, Inc., Houston, and T. L. James & Co., Houston—under three contracts awarded in July 1954, totaling $30.7 million.

• **Three basic elements**—Basically, the toll bridge is made up of three precast concrete elements: a pair of prestressed hollow cylindrical piles capped with a reinforced concrete beam forming the piers that support the prestressed non-



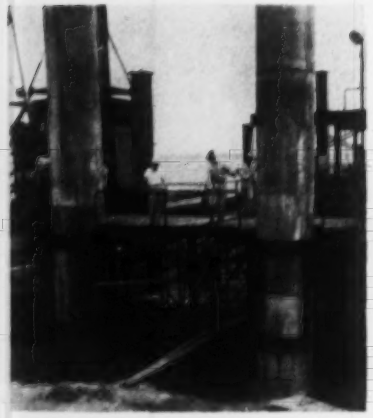
. . . Pile sections were cast centrifugally in 16 ft lengths . . .



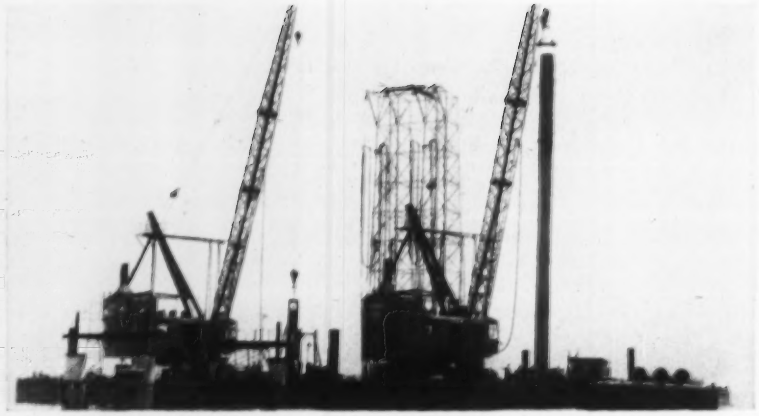
. . . Prestressing was applied to six sections laid end to end . . .

. . . Grout was forced under pressure around the 12 strands of tensioning wires.

. . . Mass production techniques were used



STARTING ACROSS THE LAKE, the first pair of cylindrical piles served as guides for spotting the next pair.



OUT IN THE LAKE, a pair of barge-mounted cranes push the job night and day; one handling the 96 ft piles, the other driving them. Workmen are dwarfed by the sizes of the rigs.

olithic deck spans. In reality, cylindrical piles were post-tensioned, while deck spans were pre-tensioned.

The prestressed concrete cylinder piles were developed by the Raymond Concrete Pile Co., which engineered the pile spinning and assembly section of the casting yard and acted as a consultant on the manufacturing and driving techniques. Built to the consulting engineers' requirements, the piles are 54-in. OD, with a 4-in. shell thickness, and average 88 ft long. A total of 4,886 was required.

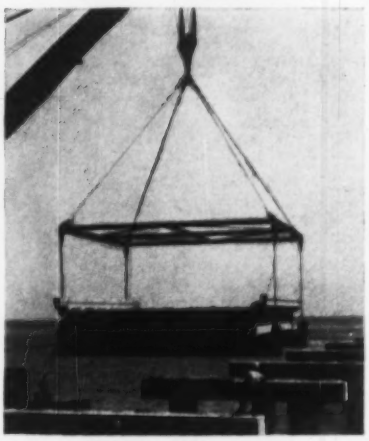
The monolithic deck spans are 56 ft long and 33 ft wide. They have a 28 ft roadway, with 2-ft-6-in. curbs to carry aluminum handrails and provide emergency walkways.

In addition to 2,235 prestressed concrete spans there are 11 special spans. The structure is designed for 70 mph speeds and an H20-S16 live load according to the AASHO design specifications. Maximum grade is 2.5%.

If all the 54-in.-dia hollow cylindrical piles in the piers were laid end to end they would measure nearly eight miles, or one-third the total length of the bridge. There are 430,000 lin ft of these prestressed piles.

Main quantities in the bridge also include 240,000 cu yd of concrete in the deck and pile caps, 18,000 tons of reinforcing steel, and 3,000 tons of structural steel.

As would be expected, it also took a lot of high tensile wire and cable for prestressing the piles and deck spans. A total of 11,350 miles (3,200 tons) of 0.192-in.-dia. prestressing wire was used in the piles and a total of 4,150 miles (3,500 tons) of ¾-in. prestressing wire strand was used in the deck spans.



GIANT DERRICKBOAT hoists 185-ton 56-ft span bridge section atop concrete-capped pile piers.

• **Mass production**—The techniques of mass production were applied to all elements of the 24-mi toll bridge. They began with a 37-acre casting yard and plant established near Mandeville at the north end of the bridge.

In building this casting plant and yard, in only three months, the contractor dredged 190,000 cu yd of material; placed 240,000 cu yd of fill; drove 8,300 temporary wood piles; poured 19,000 cu yd of foundation concrete; and laid 15,500 sq yd of concrete paving.

The total investment in this yard for casting, prestressing and prefabricating the components of the bridge is reported to have been between $4.5 million and $6 million. Normally it operated on two 10-hr shifts, 6 days per week.

At the height of construction operations, the contractor averaged one-half mile of completed bridge per week.

• **Casting operations**—The cylindrical piles were centrifugally cast in steel forms, using a concrete having a minimum compressive strength of 5,000 psi at 28 days.

The pile sections were actually post-tensioned, after being cast, steam cured and partly air cured. Twelve cored holes in the 4-in. shell of the 16-ft pile sections were provided for inserting the high-tensile stressing wires.

To make a 96-ft pile, six 16-ft sections were laid end to end, using a thermoplastic seal at the joints. Pile lengths of 80 ft and 88 ft also were used. The tensioning wires were inserted in the cored holes, stressed to 150,000 psi, and the cores filled with grout applied under 80 to 100 psi pressure.

In addition to the post-tensioning wire, the pile sections were reinforced with wire cages made of conventional spiral wire welded to longitudinal bars. A 96-ft pile weighed about 33 tons.

The 56-ft long deck spans—with their 28-ft roadway and 2-ft-6-in. curbs to provide emergency walkways and support the aluminum handrail—were precast in special metal forms. Each of the seven girders of a span was prestressed with 25 strands of 7 wires each.

Enough forms were assembled on three huge casting beds to cast a total of 24 spans. Each span was cast complete in one continuous pour, then prestressed with hydraulic jacks. After a set of spans had been steam cured, the tension in the stressing wires was gradually slacked off to where the ends of the strands could be cut free.

Completed deck spans weighing 185 tons each were moved from casting yard by gantry crane, placed on barges and towed to the bridge site. There

they were hoisted into place atop the concrete capped cylindrical pile piers.

• **Erection methods**—Mass production methods were also applied to erection of the bridge across the lake. There were three phases: The 96-ft cylindrical piles were barged to the site and driven in pairs by a barge-mounted piledriver of unusual size and capacity. Considerable jetting was needed to sink the piles. They were driven into a dense sand-clay material of good bearing capacity, about 70 ft below lake level.

Next, the 20-ton reinforced concrete pile cap was hoisted into place atop the piles and anchored to them by cast-in-place plugs. This completed the pier. The third marine operation was to barge a prestressed 56-ft deck span out to the site and hoist it into position on top of the piers. Aluminum handrail expansion plates and roadway lighting were added later.

• **Construction timetable**—Construction of the 24-mi toll bridge got under way in January of last year. The first pile was driven on May 23, 1955 and the last one June 22 of this year—a total of 430,000 lin ft of 54-in.-dia cylindrical piles in 13 months.

At that time crews setting the reinforced concrete pier caps had about two miles more to go to reach the south end of the bridge, while crews setting the 56-ft span roadway sections were about one-half mile behind the capsetters.

• **Traffic potential**—Traffic surveys by DeLeuw, Cather and Co., consulting engineers, Chicago, indicate that nearly 1,300,000 vehicles of all classes will use the 24-mi toll bridge during its first full year of operation. This is expected to produce a gross revenue of $1.9 million. In addition, about $700,000 will be available from a special highway fund. The toll bridge is expected to earn $2.5 million during its 10th year of operation and $3 million during its 20th year.

In addition to the charge of $1 per passenger car, other recommended one-way tolls are: light trucks, $1.20; medium trucks, $2.35; three-axle trucks, $2.90; four-axle trucks, $3.75; and buses, $2.00. The commission is also studying the possibility of establishing commuter rates.

• **Men in charge**—Brig. Gen. Joseph J. Twitty, USA (ret.) was resident engineer on the project for Palmer & Baker, consulting engineers. W. E. Pantle was assistant resident engineer, and J. J. Waddell was in charge of the field laboratory. J. E. Walters was project manager and David Milhan chief engineer for the Louisiana Bridge Co.

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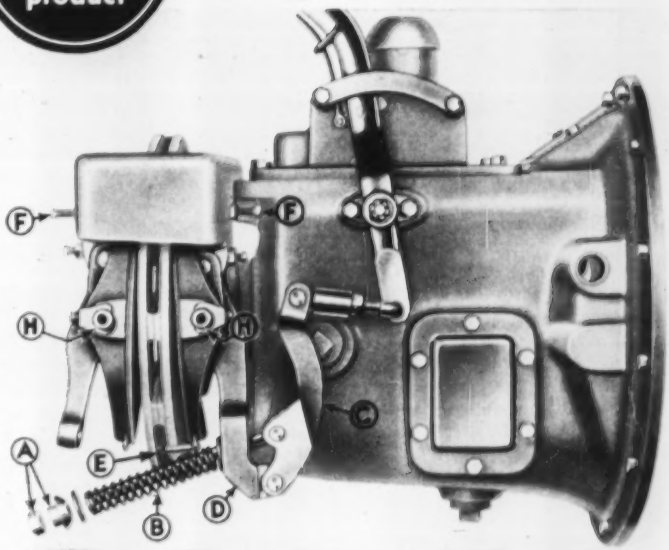

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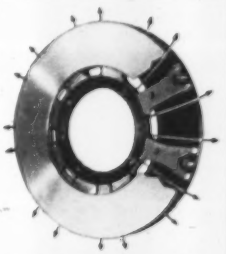

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(illustration above)

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2 Insert 1/32" shim between front shoe lining and disc and adjust pull-rod to maintain this clearance, first being sure to have hand-lever in full release position.
3 Further tighten nut A so that rear shoe lining is firm against disc but so that shim in front can still be removed. Remove shim.
4 See that tension spring E is in place, then adjust screws F so that linings are parallel with disc.

See how easily relining is accomplished

1 Remove nut A.
2 Remove spring E.
3 Apply hand lever so that rear arm can be swung back clear of tie rod and spring.
4 Remove shoe pin locks H, and drop shoe.
5 Replace relined shoes and adjust as per instructions.

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TVA had to contend with hydraulics problems galore: an existing dam, a 20,000 cfs filling flow, a tortuous navigation line, and tricky lock-emptying conditions

Wilson Lock: Models Lick Site and

TVA engineers have come up with answers to most of the major hydraulics problems involved in designing record 100-ft-high Wilson Lock on the Tennessee River—and none too soon; for construction began on July 2, the same day President Eisenhower signed a $7.5-million appropriation for the $35-million structure. The 110x600-ft lock chamber is to be installed in the existing Wilson Dam and is designed to handle a filling flow of 20,000 cfs. Additional complications are introduced by a long navigation canal downstream whose water level is below the main stream's and which joins the Tennessee right where a railroad bridge crosses the river.

No less than four separate models are being studied at the Tennessee Valley Authority Hydraulics Laboratory at Norris—one a huge 1:16 scale model of the lock.

Wilson Dam, completed in 1925, is presently equipped with three small locks: two chambers at the dam each about 60x300 ft with a combined lift of 90 ft and a 10-ft lift lock 2½ miles downstream at the lower end of Florence canal. A tow requires six times as long to pass Wilson Dam as to pass the slowest locks at the other seven dams on the Tennessee River which create a 9-ft minimum depth extending 630 miles from the Ohio River back to Knoxville. In addition, the navigation line in the Wilson Dam area is tortuous. Going upstream, tows must pass under two bridges before entering Lock No. 1 which at periods of high flow may be submerged, thereby interrupting navigation. And when tows leave the upstream chamber of the lock at Wilson Dam, they are in direct line with a projection on the north bank of Wilson Reservoir. Exit from this lock is extremely difficult.

For these reasons, a new lock at Wilson Dam is imperative. First decision involved its size. Although some locks on inland waterways are now being built to larger dimensions, a 110x600-ft chamber seemed proper since this size lock exists at Pickwick and Kentucky Dams downstream.

It was then determined to build a 100-ft lift at the dam, deepen Florence Canal by 10 ft and eliminate the downstream 10-ft lift. To build a 90-ft lift at the dam and a new 10-ft lift downstream in the canal would be less economical due to the necessity of maintaining operating staffs at both locks. A third chamber with 10-ft lift is to be built on the existing double-lift at the dam for auxiliary navigation.

Cutting a new and straighter navigation canal down through the middle of Patton Island was considered but rejected since the existing 10-ft

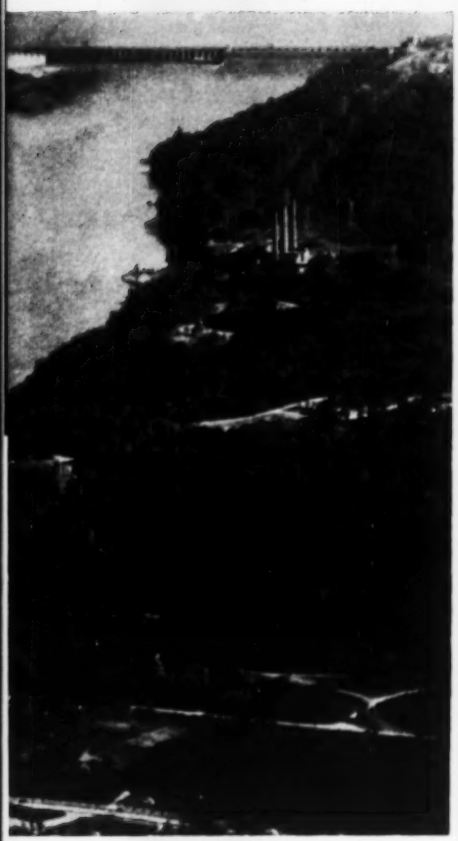
CANAL ALIGNMENT will be revised as shown to improve sailing line. Tennessee River navigation now uses 10-ft lock above railroad bridge,

100-Ft Lift

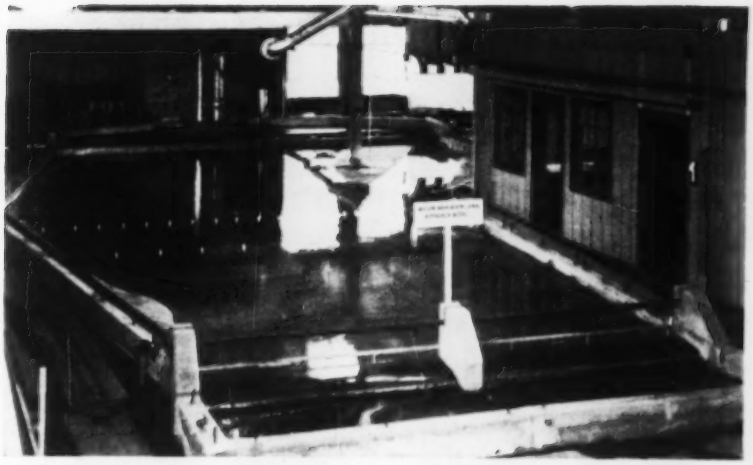
lift would still have to be used for auxiliary navigation and would require a second operating staff (it was out of the question to deepen existing Florence Canal just for auxiliary navigation as well as cut a new canal).

• **Filling system**—Design of the filling system required the major research effort—and construction of three models in the TVA lab. An 11½-min filling time, considered reasonable for a lock of this size, requires 20,000 cfs of inflow. Since Wilson Dam exists, the conventional submerged inlet ports in the face of the lock wall upstream from the upper gate sill cannot be utilized. An obvious answer is culverts through the dam, but these would involve sinking, sealing and unwatering a bulkhead type cofferdam against the upstream face of the dam.

So the first plan tested on the 1:16

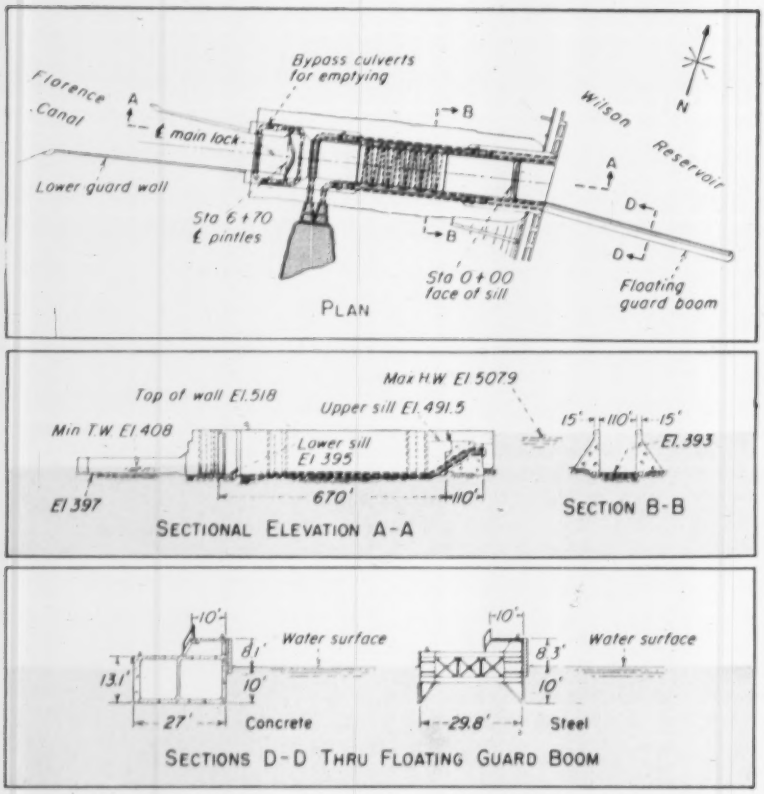


ıen double-chamber 90-ft lift at Wilson Dam.



1:100 **REPLICA** of approach to downstream canal (bottom left) will resolve eddying condition at tip of Patton Island. Model was constructed in reverse because of space limitation at TVA Hydraulic Lab at Norris, Tenn.

NEW WILSON LOCK with a 110x600-ft chamber will replace spillway gates 1 through 8. A 10-ft lift chamber will be added to existing 90-ft lift at left for auxiliary use.



FILLING AND EMPTYING. Each 15x23-ft filling culvert will pass 10,000 cfs. Water empties into river except for last few feet which bypass culverts conduct into canal.

scale model of the lock was a scheme utilizing the adjacent spillway gates to fill the culverts. Besides avoiding the need of cofferdams during construction, use of the spillway gates would eliminate a conventional-type tainter gate in the filling culvert.

Unfortunately, the large-scale model quickly showed that air entrainment over the spillway gates produced unacceptable turbulence within the lock and the obvious scheme of culverts through the dam was resorted to.

After modifying the scale model accordingly, a thorough testing program was undertaken to determine the maximum possible height of the culvert intake (to reduce construction difficulties with cofferdamming) and the proper amount of aeration to be supplied the reversed tainter gate in the culvert to reduce cavitation. A smaller-scale model of the entrance portion of the culvert was constructed to achieve proper flow characteristics in the prototype.

The plan shown on an accompanying drawing was finally adopted. The river and land culverts will each pass about 10,000 cfs. Entrances are 15 ft wide by 23 ft high, with the culverts reducing to 15 ft square. Trashracks will be provided at the entrances.

Final discharge into the lock will be through a bottom lateral system. Present designs call for 10 laterals, five connected to each main wall culvert. A third model, of one lateral, was fabricated to determine size and shape of the lateral and of the discharge ports to achieve uniform velocity and discharge from each port. Entrances to laterals will be 9 ft wide and 6 ft high. The width will gradually reduce. Discharge ports, six on each side of the lateral, will be 3½ ft high and 1½ ft wide. Additional laterals are being constructed for installation in the 1:16 model of the lock to ascertain the effect of discharges from facing ports in adjacent laterals.

• **Emptying system**—Since the main river is an average of 5 ft higher than the canal downstream from the lock, the lock cannot be completely emptied into the river. To empty into the canal at a rate of 20,000 cfs would develop serious turbulence and eddies near the lock entrance and swells in the canal.

It was decided to empty both the land and river wall culverts into the river and to provide bypass culverts into the canal to remove the last few feet of water in the lock. Sluice or butterfly gate opening through a miter gate were considered, but did not seem as desirable.

• **Gate design**—The great lift in Wilson Lock requires a downstream miter gate 117 ft high. Although an arched girder type miter gate would be lighter, its complicated—and therefore more expensive—fabrication resulted in the choice of a straight girder type.

The high lift also allowed another possibility—replacement of the top 37 ft of downstream gate by a fixed structure either of steel or concrete. However, extremely difficult problems would occur in sealing the upper part of the gate to the fixed wall and in providing suitable access to the gudgeon pin and anchorage bars.

A lift gate in combination with a fixed wall above was also considered. It would allow final emptying of the lock simply in cracking the lift gate and a 30-ft reduction in length of the main lock walls since no swing space is required. But it would cost $250,000 more than the conventional miter gate.

However, a lift-type gate was chosen for the main upstream gate, principally because it fitted in best with the overall arrangement around the upper gate sill. It also permits ample room for emergency closure apparatus.

The lift gate is of welded girder construction with wheels operating on a track in recesses in the lock walls. An overflow crest on the gate permits supplemental inflow during final minutes of the filling operation. The two lower girders of the gate are enclosed with a plate, forming a buoyancy chamber that reduces net weight of the gate when submerged.

• **Emergency closure**—The Nashville District of the Corps of Engineers, who will operate and maintain the lock, suggested a scheme for emergency closure in which a central support pier of structural steel can be lifted and locked into position. During normal operation this frame lies flat in recess in the gate sills. Steel truss stop logs can be placed in the raised frame to effect the desired closure. Provision will be made in Wilson Lock—as has been done in other 110-ft locks on the Tennessee and Cumberland Rivers—for seating a floating caisson that can provide temporary closure. The Corps of Engineers may build such a caisson.

The main lock walls and downstream guard and guide walls at Wilson will be of conventional design; the guard wall will function as a cofferdam during construction with water nearly to its crest on the river side. The upstream guard wall will actually

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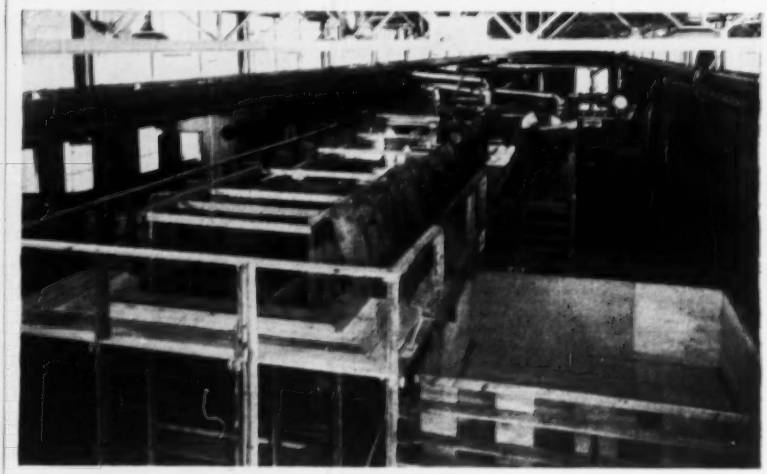
. . . Wilson Lock: Canal can be deepened in dry



1:16 MODEL of main chamber was needed to study aeration of reversed taintor gate in filling culvert, bottom lateral filling system, filling and emptying times.

be a guard "boom" since it will float in the 110-ft deep Wilson Reservoir. A similar boom of concrete has functioned at Kentucky Lock downstream, but a steel design may be less expensive initially. However, the lighter steel structure does not have as good stability during heavy storms and may be more liable to damage from barges continually striking it. A final decision has not yet been made.

• **Canal alignment**—The present dam at the lower end of Florence Canal provides an 11-ft channel. With the elimination of the lock and dam at this point, channel depth of water will be lowered 10 ft, thereby requiring deepening of the canal by 10 ft. A temporary 100-ft-wide canal will be excavated through Patton Island bypassing the portion of Florence Canal to be used after new Wilson Lock is completed (see photo). Navigation will use this temporary canal while main Florence Canal is unwatered and excavated in the dry. About 1,000,000 cu yd of rock and 2,500,000 cu yd of overburden will be removed.

FILLING CULVERT MODEL solved cavitation problems.

The new alignment at the lower end of the canal was carefully chosen to provide the best possible sailing line past a swing span of the railroad bridge. However, during high flow, eddies develop at the lower end of Patton Island, thus complicating the difficulties encountered by tows negotiating past the railroad bridge. A 1:100 scale model of this area has been constructed by the TVA laboratory to determine whether excavation from the canal can be deposited in a manner that will improve this eddy condition. The answer may also lie in removing the tip of Patton Island.

A 20-ft-wide, high-level fixed-span bridge will replace a bascule span of similar width over the existing lock.

With construction now under way, the new lock and deepened canal should be open by the fall of 1959. Construction of the third 10-ft chamber at the existing double-lift lock, to be begun upon completion of the new lock, will require another 18 months.

Planning studies for new Wilson Lock were supervised by James S. Bowman and Reed Elliott; design is under the direction of Robert A. Monroe and George P. Palo; construction will be by the usual TVA force account method under George K. Leonard, except the canal excavation which will be contracted; Rex Elder, director of the TVA Hydraulic Laboratory, supervised the model studies. C. E. Blee is chief engineer of the Tennessee Valley Authority.

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A METAL CHAMFER STRIP THAT PRODUCES NEATER, CLEANER CORNERS AT LESS COST

RE-USABLE

REDUCES LABOR TIME

CUTS & BUTTS TO ANY LENGTH

EASY TO HANDLE

STURDY GALVANIZED STEEL

For better chamfers in concrete construction at less cost, investigate the important advantages of Superior Speed-Strip. Remember — there's only one material cost . . . labor is reduced substantially . . . pays for itself in a few re-uses!

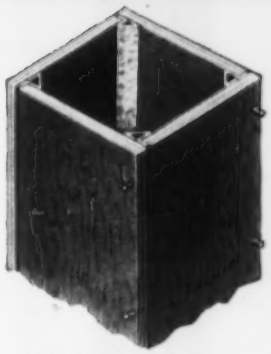
Built for rough contractor usage, Speed-Strip is:

(a) Easy to handle and quickly nailed to edge of form lumber, plywood, or S4S.

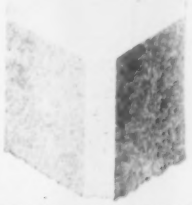
(b) Reduces damage to forms because of minimum nailing and stripping. As Speed-Strip stays on the form during stripping, the form with chamfer is always ready for re-use. Therefore, only one application to forms is necessary where jobs duplicate column sizes, spandrel beams, pilasters, etc. Where jobs are not typical sizes, Superior Speed-Strip is easily detached from form boards, then cut and butted to desired lengths for many re-uses.

(c) Reduces time loss in finishing—produces smooth neat corners.

Comes in 8 ft. stock lengths which may be cut or butted to any length. Made of 24 ga. galvanized steel with $1\frac{1}{8}$" face for concrete contact. Write for sample.



MINIMUM NAILING AND MINIMUM WRECKING

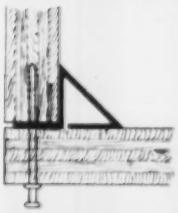


SMOOTH, NEAT CORNERS
Always a uniform size and shape chamfer

HERE'S HOW Speed-Strip WORKS

Tack Speed-Strip through indentations on to edge of form board with lath type nail.

Place companion form board in position as conventionally done. Drive double-headed nail through.



SUPERIOR CONCRETE ACCESSORIES, INC.

4110 Wrightwood Avenue, Chicago 39, Illinois

New York Office
1775 Broadway, New York 19, N. Y.

Pacific Coast Plant
2100 Williams St., San Leandro, Calif.

Continuous Operation: Secret of Speedy

With many miles of primary and secondary roads to be resurfaced this year—and limited supplies of manpower, equipment and money—New Hampshire is turning to two principal methods of doing the job.

Results in either case are fast work, durable pavements, and money saving.

One method of resurfacing—dubbed "grader seal" by New Hampshire Highway Department engineers—makes use of a standard patrol grader both to mix the aggregates and asphalt and to spread them for the new surface. The other—brush sealing—uses steel drag brooms to achieve its results.

While recent contracts for resurfacing 150 miles of roads allocate equal mileage to both methods, the grader seal process is gaining favor, particularly in refinishing those roads that have been in use for more than five years.

For fairly new roads, the economy of the brush coat makes it appealing to budget-wise authorities. On strips worn by time, weather, or heavy usage, however, the smoother grader seal pavement makes it worth the resulting added cost of $1,200 per mile, it is claimed.

In both methods, initial steps involve pretreatment of ¾-in. crushed stone base material with MC-0 asphalt containing about 1% by weight of an anti-stripping agent. The stone is shifted by buckets of known capacity from one pile to another while asphalt is sprayed into each bucket load at the rate of 1.25 to 1.50 gal per ton. A constant secondary check on treatment rate is obtained by actual tank measurement of the asphalt that is used on each 100 buckets of stone handled.

Depending on job conditions and progress scheduling, aggregate is either stockpiled or hauled directly to the project for placement.

Regardless of the sealing method used, the surface to be treated is swept clean immediately before application of the initial coat of oil. From this point on, application procedures for the two methods diverge.

• **Grader seal**—One lane of the road is sprayed with MC-3 asphalt at rates ranging from 0.1 to 0.15 gal per sq yd, depending on the porosity of the surface. The pretreated ¾-in. base stone is then spread on top of the oil so as to attain coverages of from 45 to 55 lb per sq yd, with the greater quantities going on rougher sections.

1. Pretreated stone goes down over oiled surface . . .

3. Spreader places pretreated ⅝ in. stone on second lane . . .

While stone is being placed, the asphalt distributor, having completed oiling a 2,000 ft stretch of one lane, turns around and covers the second lane with a minimum 6-in. overlap of oil. Then, swinging over to the lane where stone has been placed, the distributor retraces its course, applying the MC-3 over the stone at a rate of 0.15 to 0.2 gal per sq yd. A grader follows immediately behind the distributor on its second pass, to begin the mixing.

After completing its two round trips over each section, the distributor moves on to the next section to repeat the process.

The grader, meanwhile, rapidly blades the aggregate from side to side until its color indicates a uniform covering of oil, then spreads the coated stones as evenly as possible. A follow-up truck containing aggregate from the windrows and manned by a crew of three to five, covers any bald spots or high points. Triple axle, steel wheel rollers then make passes until the asphalt hardens.

Now, stone box crews—who have been working on the next section—return to apply ¾-in. untreated stone to the rolled surface. Application rates vary from 7.9 to 15 lb per sq yd depending on temperature, weather and volume of traffic. The area is rolled again and, if necessary, more stone is added until traffic ceases to "pick" any stone from the new surface.

• **Brush seal**—For the brush seal method, the continuous run of the asphalt distributor is not made. One half the road is completely sealed before any work is started on the second lane. The surface is first sprayed with RC-4 asphalt rather than MC-3, and the ¾-in. pretreated stone is applied at a rate of only 25 lb per sq yd. The stone is then evened with a steel

Resurfacing

2. Distributor sprays second lane . . .

4. Blading insures uniform coating after second spraying . . .

5. Follow-up crew covers bare spots while roller compacts the surface.

brush drag, given a fog coat of RC-4, and rolled. The ¾-in. untreated stone is applied and rolled in the same manner as for the grader seal.

In both processes, traffic flow is maintained through use of pilot trucks which lead vehicles over ready sections of road.

Staton Young, of the New Hampshire Department of Public Works and Highways, is overall supervisor of the sealing program.

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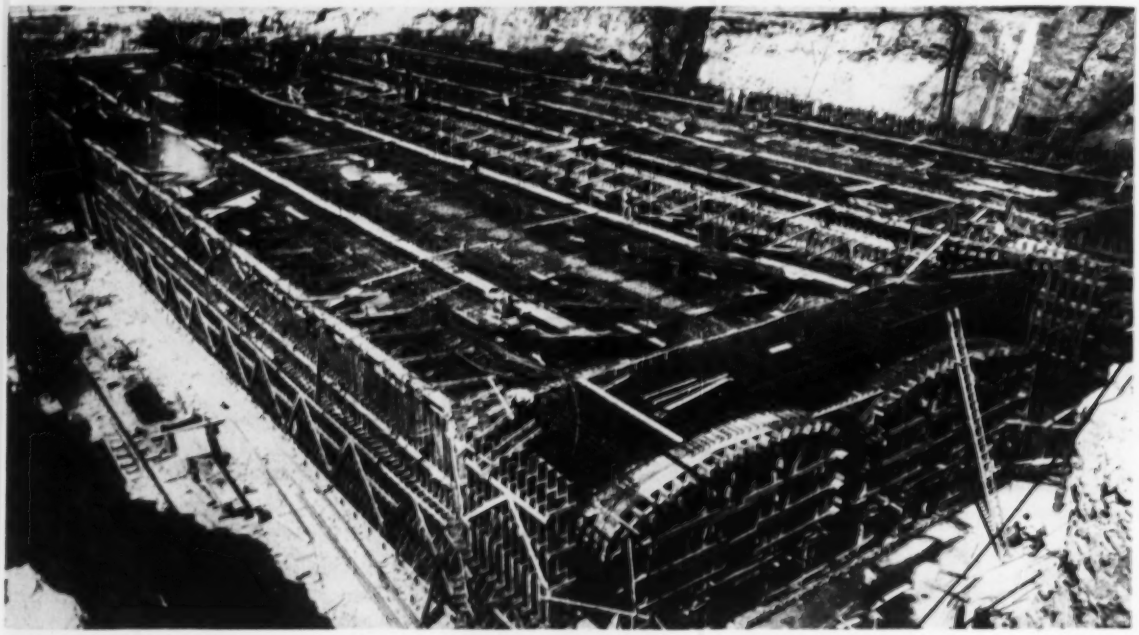
Cuba

Highways Snaking across the green, palm-studded hills of Cuba toward the resort town of Varadero, which was previously reached only by narrow, winding roads.

Seawall Extension of the Malecon along Havana's waterfront.



Tunnel Heavy formwork, supervised by French engineers, is in place for four tubes of tunnel under arm of Havana Bay. Tube will open up new residential and business area, previously almost inaccessible.

Pushes A Construction Boom

Sparked in part by a country-wide public works program, and partly by the willingness of private capital to invest in construction projects, Cuba is rapidly pulling itself out of an economic recession that hit the island republic in 1952-53.

Although the building boom tapered off slightly in 1955—from $33.1 million in Havana alone in 1954 to $28.1 in 1955—there are signs that it is rising again this year. The National Bank of Cuba reported that bank loans for construction this year have been increasing rapidly. A recent bank survey showed that the value of apartment building construction has increased more than 50% since 1952, private housing is up 17.4% in the same period, and other construction is up 22.6%.

And while private capital has been going into housing and other structures, the government has been engaged in a nationwide public works program that ranges from a government center in Havana to improvement of country roads far in the rugged interior, and the island's first hydro-power project (ENR June 14, p. 73). A recent government announcement said that a total of 605 projects of all sizes were completed in the last 12 months, and 119 others are still in progress.

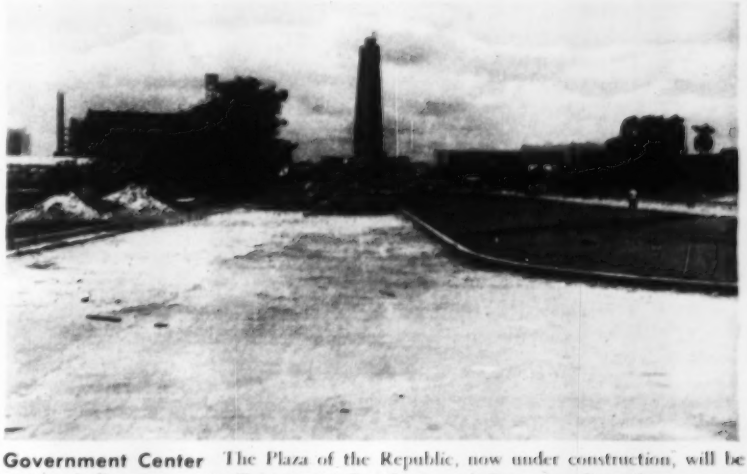
• **Tunnel job**—Biggest construction job now in progress is a twin-tube vehicular tunnel to connect downtown Havana with nearly undeveloped lands across the Bay of Havana. Completion of the tunnel will be followed by construction of virtually a new city on these lands.

The tunnel is being built by a French firm—Societe des Grandes Travaux De Marseille—under special financing arrangements between the contractor and the government in a three-way financial operation that involves two government agencies: Comision de Fomento Nacional and the Financeria Nacional de Cuba; and a private company—Compania de Fomento del Tunel, which also is interested in development of the lands across the bay. Frederick Snare Corp., a U.S. firm, acts as supervisor and consultant to the private company.

Financing is handled under a $35-million bond issue by the private in-

Boulevard. Carefully clipped shrubs in center mall are characteristic of Havana's Fifth Avenue, now being extended. New homes have made it fashionable address.

Yacht Basin. Marina at Varadero is one of many being constructed by federal and municipal authorities, to attract tourist trade. More than 50 slips are available.



Government Center. The Plaza of the Republic, now under construction, will be center of all government offices except Presidency and Congress. Central monument is memorial to Jose Marti, national hero of Cuba's fight for independence.

vestors, but involves also cash and a large scale sugar purchase (400,000 tons) by the French contractor. Cost of the tunnel proper is estimated at $28 million.

The tunnel is being constructed by the trench method, and sinking of prefabricated metal sections for link-up under water. Five tubes are being constructed in a Havana drydock, each tube to carry four lanes of traffic. The tubes are to be made of prestressed concrete, rectangular in section being 73 ft wide and 24 ft high, and each 360 ft long. They will carry four parallel traffic lanes, 11 ft wide, and two maintenance and police walkways. A 14-ft clearance will be provided.

Maximum depth of the roadway is 70 ft below sea level, allowing a 46-ft channel (330 ft wide).

• **Access roads**—Access roads to connect with the new tunnel will complete the job of lifting the rocky seaface of the city itself.

One of the main arteries leading to the underwater crossing is the Malecon—a wide avenue along the city's waterfront. Started first by Spaniards, extended during U. S. occupation and extended again by successive Cuban governments, the Malecon still covers only about half the waterfront length. The street will now be extended for the full length of the waterfront, to the Almendares River on the western edge. Cuban engineers look on this work as a most difficult project, since a part of the new roadway must be built on fill extending into the bay.

Across the Almendares River—almost a continuation of the Malecon—is Fifth Avenue, which residents consider their most beautiful thoroughfare. The street runs through the fashionable Miramar residential section, but peters out in an area of vacant lots at its end. Under current plans, the government will extend the road several miles to the neighboring town of Santa Fe.

Another street to be improved is General Batista Ave. (known locally as Linea), where a now-abandoned trolley right of way will be paved to provide additional traffic lanes. Other key road construction projects include a highway from Havana to the resort town of Varadero, and one from Cienfuegos to Trinidad.

• **Government center**—At present, the Cuban government functions from scattered buildings, some of which are over 200 years old.

To consolidate government operations, construction is now under way on the Plaza of the Republic in Havana, to house most offices: A justice building, which will be headquarters for Havana courts as well as the Ministry of Justice; a National Library Building; a National Theater. Already occupied is a Tribunal of Accounts Building (Budget Bureau)—a nine-story structure.

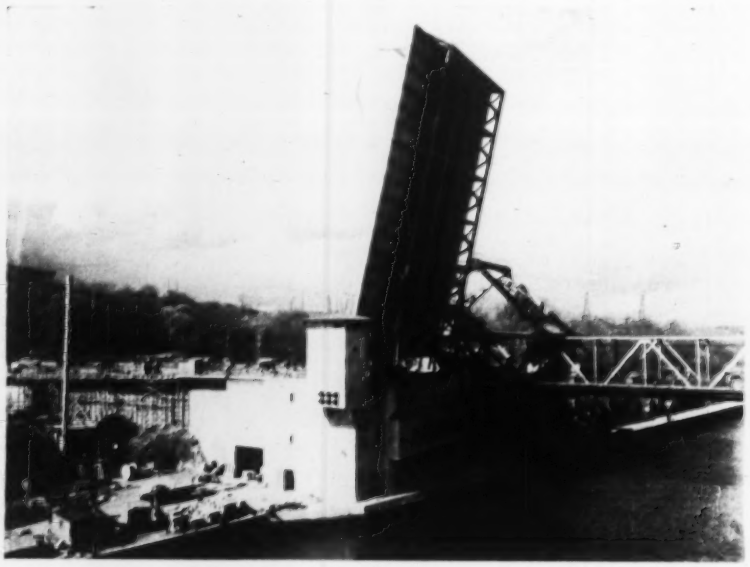
Only government offices not to be moved to the Plaza will be the office of the President, and the Congress, which will continue to meet in the Capitol.

• **Other structures**—Rising about the Plaza is the Jose Marti monument—honoring the leader of Cuba's fight for independence—which resembles the Washington monument, and is visible from many parts of the city.

Not far away—though not part of the Plaza—a second Sports Palace is under construction.

Seating 15,000 persons, the structure will feature a central concrete dome with an outside diameter of about 338 ft, supported on two concentric rows of concrete columns, to leave an unobstructed interior for sports events.

To remedy an acute shortage of hotel space, work is now under way in the Vedado suburb on the Havana Hilton Hotel, a 22 story, $11-million structure that is being built and will be operated (by Hilton Hotels Corp.) for the Culinary Workers Federation of Cuba. The structure will provide 600 guest rooms.



Bascule for Stockholm Is One of the Biggest

This new bridge, opened to traffic June 1 in Stockholm, Sweden, was billed as the largest single-leaf bascule in the world, "reckoned by its area," which is determined by a span of 138.5 ft and a width of 73 ft. Strictly speaking, the claim may be justified, although each leaf of the double-leaf Outer Drive bridge in Chicago exceeds 13,000 sq ft, whereas the Swedish bridge barely exceeds 10,000 sq ft.

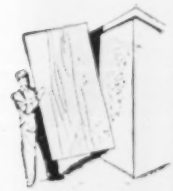
Stockholm's Danviksbron, as it is called, is nevertheless a notable structure. Designed by the city's port authority, provisions have been made for later widening to 89 ft, and all machinery and other facilities are planned for this ultimate size. Its counterweight, which weighs 1,063 tons, is of the concealed type, operating in a pit blasted out of the foundation rock. A lightweight deck is used consisting of galvanized steel grating filled with asphalt and having a rolled-in surface of coarse gravel.

In closed position the bridge affords a navigation clearance of 41 ft, and it can be fully opened in eight seconds.

Foreign Bids Asked For Malayan Bridge Job

The Federation of Malaya Government is asking bids from foreign contractors for construction of a $1.7-million double-decked bridge over the Klang River. With its approach viaducts, the cantilever span will be 1,400 ft long. It will link Port Swettenham with Kuala Lumpur.

No costly re-coating between pourings

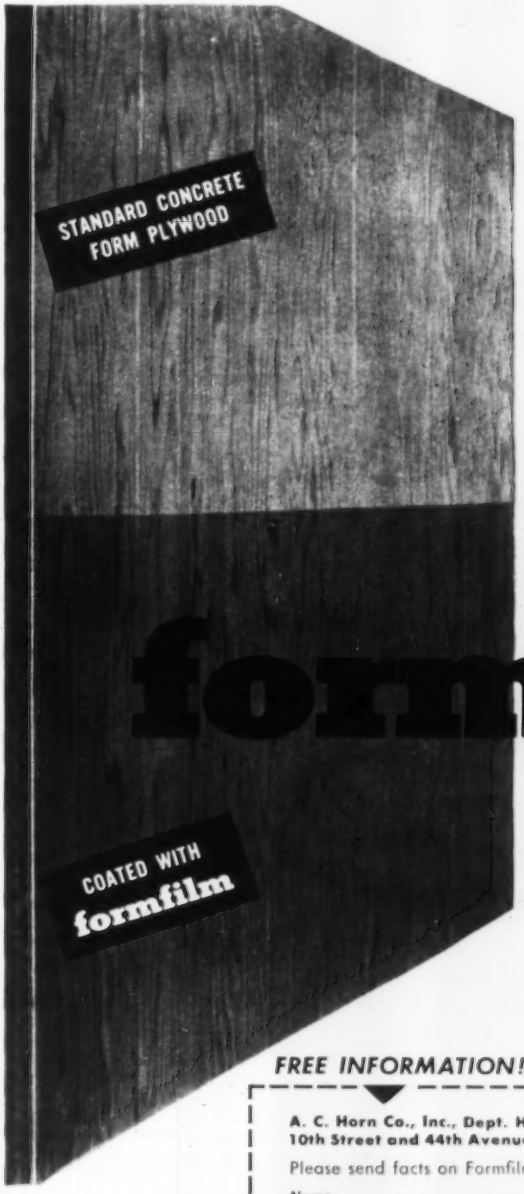


Forms strip easily

Eliminates costly rubbing of oil stain and grain marks

Leaves concrete clean, smooth . . . ready for decorating

Not an oil . . . eliminates slip hazards



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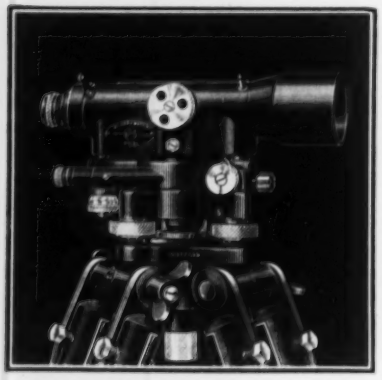

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DIETZGEN

New Products

Versatile Materials Hoist Telescopes 40 Ft or More

Flexibility and adaptability to innumerable construction and industrial jobs are among advantages given for a new model material elevator called "Roll-O-Hoist." Constructed of outer channels of aluminum, with a framework and other parts of steel, the unit will telescope to a height of 40 ft. Extensions are available for heights over 40 ft.

The elevator can be operated by gasoline or electric power. Its capacity with gasoline power is 500 lb at 85 fpm; with electric, 500 lb at 55 fpm.

Standard equipment with the unit is a side unloading platform (wheelbarrow size). An automatic dumping bucket is optional. Remote control and limit stops can eliminate the work of one man. Engineered Equipment Inc., Waterloo, Iowa.

Special Reagent Wall Paint Kills Germs for Two Years

A vinyl latex wall paint has been developed that is claimed to kill germs that come in contact with it, for a period of two years or more. A reagent, APR (Anti-Pathogenic Reagent), added to the manufacturer's Satin-X brand of wall paint gives it antiseptic properties. APR is said to be an odorless, nonpoisonous additive that will kill on contact the germs that cause such diseases as "strep" throat, nephritis, erysipelas, tonsillitis, typhoid fever, food poisoning and others.

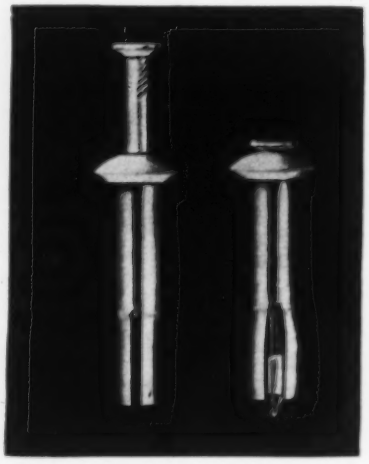
According to the manufacturer, laboratory tests conducted by the firm have shown that even after two full years of exposure with repeated washing and scrubbing, APR was still positive death to germs. APR is described as a reaction that takes place during the forming of the film of the paint. Satin-X with APR will be available in 16 standard colors as well as 300 custom shades. Jones-Blair Paint Co., 6969 Denton Drive, Dallas, Texas.

Adjustable Tilt-Up Trailer Moves Three-Wheeled Stripers

Safe and rapid one-man loading and transporting of three-wheeled striping machines is said to be possible with the new Wald Carry-Liner Model T-4.

The readily adjustable outside channel tracks plus the tilt-up trailer bed are said to increase loading speed and virtually eliminate the hazards involved in getting similar equipment loaded onto high bed trucks.

Short wooden ramps placed within the outside channels are said to make the T-4 particularly handy for moving stripers with attached sphere dispensers that ordinarily must be protected from contact with the ground during loading and unloading operations. Wald Industries, Inc., Huntingdon, Pa.



Expansion Drive Rivet For Fastening to Masonry

A masonry rivet has been added to the Southco line. Placed through a part to be fastened to masonry, into a ¼-in.-dia hole, the rivet is secured by hitting a pin with a hammer. The pin expands the shank of the rivet deep in the masonry. Southco Division, South Chester Corp., Lester, Pa.

Rig Halves Labor Needed For Drilling Small Holes

A portable drilling rig said to double a workman's output has been introduced for use on building and maintenance projects where a large number of holes must be sunk for partitions, wall sections, conveyors, conduit and pipes. The raising and lowering mechanism holds any portable drill from ¼-in. to ¾-in. chuck capacity, insures accurately drilled vertical holes up to 4 in. in dia and increases drill life, according to the manufacturer.

The two available sizes are standard, for holes to 20 in. deep, and pony, for holes to 8 in. deep. Both can be easily disassembled. Equipment Corp. of America, 1537 Superior Ave., Cleveland 14, Ohio.

Two New Groups Are Added to Line of Gas-Electric Plants

The addition of two new groups of gasoline electric plants to its line of generators has been announced by Geo. A. Matic.

Both air- and water-cooled models with ratings from 400 to 75,000 watts are now available as well as three separate lines of diesel electric plants ranging from 10,000 to 300,000 watts. Gen-A-Matic Corp., 14741 Bessemer St., Van Nuys, Calif.

Air-Actuated Soil Tester Applies 36 Tons Per Sq Ft

A new portable soil tester—capable of instantaneous application of consolidation loads up to 36 tons per sq ft—weighs 40 lb and takes a 2½-in. dia sample. The tester applies its 2,600-lb maximum load by an air activated piston inside a rubber diaphragm, eliminating spring constant correction. The load, instantly applied by the throwing of a toggle switch, is held indefinitely by an air regulator and is recorded on a test gauge. Reported sensitivity of the gauge is ¼ to ½% at full load. It is designated the Model 352 K-W Combel. Tinius Olsen Testing Machine Co., 5587 Easton Rd., Willow Grove, Pa.

Tiles Soak Up Noise And Look Like Stippled Plaster

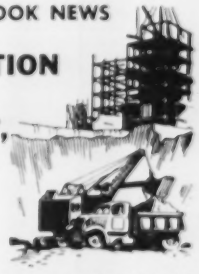
Fresco acoustical tile has the appearance of stippled plaster. Non-combustible, it is recommended for use in residential, commercial and institu-

World's Largest Trailer Hauls 100 Cu Yd

Built for use in West Virginia coal fields, this hopper trailer is claimed to be the largest in the world.

Powered by a 400-hp Model 803 Kenworth tractor, the unit is 66 ft long, and according to its manufacturers is capable of transporting more than 100 cu yd of coal at speeds up to 34 mph. Empty, the complete rig weighs just under 50 tons, loaded it will scale at 119 tons. Marion Metal Products Co., Marion, Ohio and Kenworth Motor Truck Co., Seattle, Wash.

McGRAW-HILL BOOK NEWS



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Driving batter pile of trestle for the St. Lucie Canal Bridge in Florida. Schedules called for driving 42,000 lin ft of these 55-ft light wall steel pipe piles in 90 days through a tight saturated formation of sea shells, sand and marl underlaying the top 6 to 8 ft of matted vegetable matter and sand. Skillful work by the contractor, Paul Smith Construction Company, and the powerful blows of a McKiernan-Terry S5 Single-Acting Pile Hammer powered by a McKiernan-Clayton Steam Generator completed this difficult task successfully within the time limit, with piles being driven at the rate of 40 ft in less than 10 min. driving time. McKiernan-Terry Corporation, 80A Richards Ave., Dover, New Jersey.

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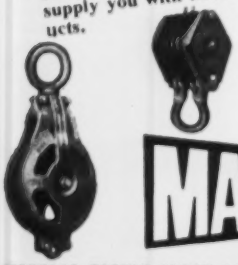

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tional building. Available in 12x12-in. and 12x24-in. sizes with butt joints, tiles can either be installed on suspension system or fastened directly to the underside of the ceiling surface.

Advantages cited for the product include an attractive rough finish, moisture resistance, light weight and dimensional stability. Also, it will not rot, decay or deteriorate. It is said to have high noise-reduction qualities. OWENS-CORNING FIBERGLAS CORP., TOLEDO 1, OHIO.

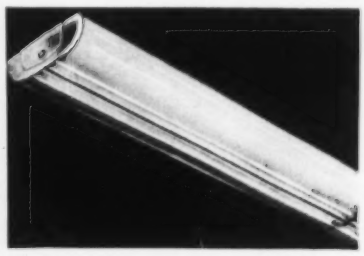
Steel, Rubber Half Tracks Are Developed for Ferguson

The Arps Corp. has announced development of steel- and rubber-belted half tracks for the new Ferguson 40 tractor. The manufacturer says that the half tracks are easily installed and removed and give the tractor a tremendous increase in drawbar power when working under poor traction conditions. Maneuverability is said to be greatly increased and travel speed is 7 to 8 mph faster than conventional crawler tractors. ARPS CORP., NEW HOLSTEIN, WIS.

Thin Contour Marks Styling Of New Two-Lamp Fixture

A fluorescent lighting fixture called the Capri is a trimly contoured twin-lamp luminaire designed for school room and commercial lighting. Available in 48-in. and 96-in. lengths for individual or continuous-line installation, it is 3 in. high and 10 in. wide. The unit holds two 40-w rapid-start or 96-in. Slimline lamps.

Diffusing panels are polystyrene plastic. A full-length vent along the bottom allows air to circulate freely, thus reducing dirt accumulation. When they do need cleaning, however, the panels can be lifted out without tools. Lamps and control equipment are serviced from above. Sliding hangers are available for mounting the units under pipes or ducts. BENJAMIN ELECTRIC MFG. CO., DES PLAINES, ILL.



Publications

Bridge film—A 30-min sound and color movie deals with the fabrication, shipment and erection of 5,000 tons of structural steel on the underside of the Golden Gate Bridge. The film portrays the addition of a bottom lateral system installed for stiffening purposes as a result of a severe 1951 windstorm (ENR June 24, 1954, p. 46). The film is obtainable on loan from ROBERT O. VALENTINE, JUDSON PACIFIC-MURPHY CORP., 4300 EASTSHORE HWY., EMERYVILLE 8, CALIF.

Torque converters—Heavy duty, single-stage hydraulic torque converters for transmission of 100 to 1,000 hp to excavating, earth-handling and construction machinery are described in Bulletin No. 468. The bulletin gives features and specifications of 17 sizes and capacities of National torque converters for exact matching with engines in this power range. NATIONAL SUPPLY CO., 2 GATEWAY CENTER, PITTSBURGH, PA.

Trenchers—The complete line of Cleveland trenchers and backfillers is featured in a 4-page bulletin. The E-270, one of the nine Cleveland models shown, is capable of digging wide, deep trenches in alleys and other narrow areas. Information on capacities, specifications and dimensions has been organized to facilitate a quick comparison of the models. CLEVELAND TRENCHER CO., 20100 ST. CLAIR AVE., CLEVELAND, OHIO.

Gas turbine—A lavishly illustrated booklet describes the Mark TA gas turbine. The turbine is a development of Ruston-Hornsby Ltd., of Lincoln, England, and under an agreement with Clark Bros. Co. the unit will be manufactured and sold in the United States. The unit develops 1,130 bhp. CLARK BROS. CO., OLEAN, N. Y.

• **Elevated water tanks**—A 20-page pamphlet on modern water storage in elevated steel tanks includes dimensional data and capacities for six basic tank types, in addition to many installation pictures and descriptions. PITTSBURGH-DES MOINES STEEL CO., NEVILLE ISLAND, PITTSBURGH 25, PA.

Replacements—A new line of replacement parts for crawler tractors is described in a folder by Amsco. The folder describes track shoes, replacement rims, idler wheels and other equipment available. AMERICAN MANGANESE STEEL DIV., 382 E. 14TH ST., CHICAGO HEIGHTS, ILL.

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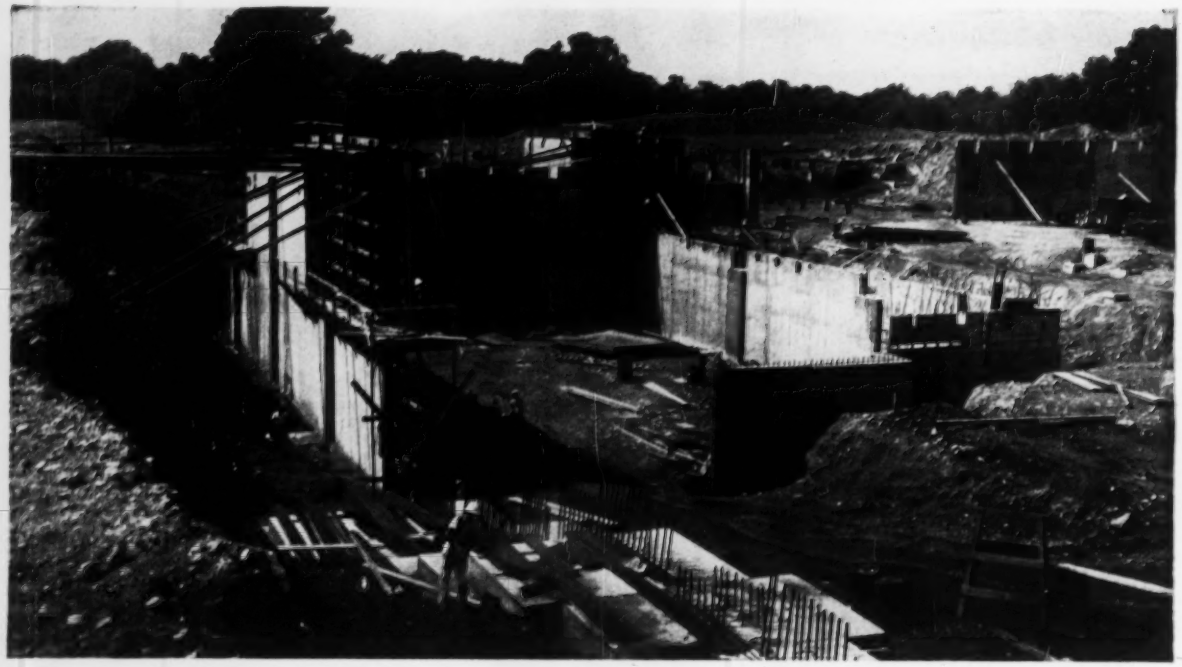
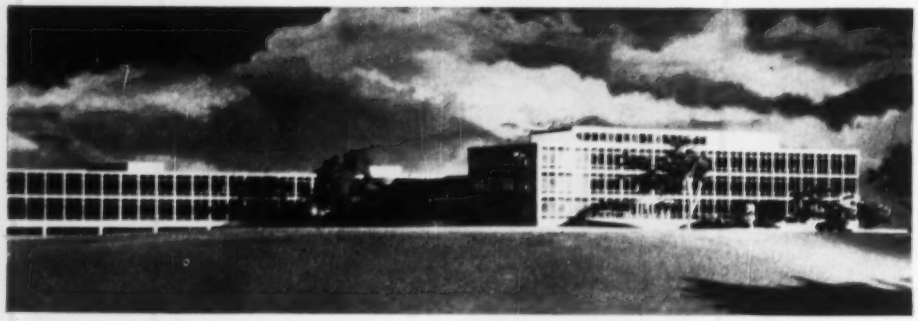


Foundations Laid for 500,000-sq ft Office Building



Architects for the new office building are Skidmore, Owings & Merrill; general contractor: Turner Construction Co. Both are New York firms.

A new office building for Connecticut General Life Insurance Company is now rising in the rolling country five miles from downtown Hartford. The new building will contain 500,000 sq ft of floor space and provide accommodations for 3000 employees.

Basically the structure will be a long horizontal stretch of three unencumbered floors, with no interior columns, no permanent floor-to-ceiling partitions, and long lines of heat- and glare-absorbing glass windows. A four-story wing adjoins the main structure.

Shown here is a section of the foundation being built. More than 1000 tons of Bethlehem Reinforcing Bars were placed in this portion of the new building.

Bethlehem bars, used on so many important concreting jobs, are made exclusively from new-billet steel of known analysis. They come in size ranges from Numbers 3 to 11, with deformations meeting ASTM Spec. A-305. They are cut to length and bent in our shops, and reach the job bundled and tagged, with bar lists included, ready for instant placing.

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BETHLEHEM REINFORCING BARS

BETHLEHEM STEEL

How Seven Cuttings Become One

According to the Knox Corp., Thomson, Ga., the unique system for cutting aluminum-foil reflective insulation shown above has resulted in labor savings of 84% over conventional cutting methods. The firm says the setup permits one man to cut enough insulation daily for the walls of 32 houses averaging 800 sq ft of exterior wall space each. Insulation cutting expenses have been reduced from $2 to $0.32 per house.

The labor-saving device consists of a box containing seven rolls of reflective insulation mounted on a long saw table. Rolls are mounted on wood pin rollers so as to unroll freely. The end of each roll is pulled to the open end of the box and the seven roll ends are clamped together. The cutting procedure begins by pulling the clamped end forward to a stop set at the exact stud length. This results in seven layers of insulation being stretched horizontally along the table, and yields seven pieces in one sawing.

Rubber Blocks Carry Outfall Sewer

An unpleasant surprise—unstable soil extending 40 ft below grade—had engineers guessing on the construction of a small bridge to carry the Welwyn Garden City District's outfall sewer over a small stream in Hertfordshire, England. Original plans specified a three-span structure to carry 12-ft lengths of 36-in.-dia precast concrete pipe across the stream's 90-ft width. With this design, deflection of each 30-ft span was negligible and it was figured that any small movement in the rigid pipes would be taken up by the rubber in the pipeline joints.

During construction however, soil beneath the stream was found in a chalk-like, almost liquid state for a depth of 40 ft. The prospect of supporting intermediate piers on piling appeared a costly and difficult solution. Instead, the engineers went to a single 90-ft span design—with a pair of prestressed H-section girders and cross members at 4- to 5-ft spacing to serve as pipe supports.

But, with a span three times the original, deflection was no longer negligible. Dead load deflection, plus the varying live load deflections from sewer flows, combined to exceed allowable limits for the almost rigid pipes.

The problem's solution was found in the use of rubber blocks at each cross member. The blocks, used in sets of four per support, were designed to maintain uniformity of the support reactions. With blocks 4 in. square and 1 in. thick, under maximum load condition, the three supporting thrusts on any pipe length differ but 7% from the mean of all support reactions.

After the blocks were keyed and cemented in place, the line was twice filled for testing and the rubber block solution passed with flying colors.

Skin Diver Helps Build NYC Subway Extension

A skin diver helped in the construction of New York City's subway line across Jamaica Bay to the Rockaways.

Working for Fishback and Moore, Inc., electrical contractors whose $2.3-million job required fast and accurate submarine placement of 45,000 ft of power, signal, supervisory, and control cables at both the North and Beach Channel Bridges (ENR Aug. 11, 1955)—the diver spent several hours 25 ft beneath murky waters of the bay.

The diver's job was to spot obstructions, determine cable cutting lengths, and to decide how to best mount the underwater cable cleats.

Because his equipment consisted of little more than a 35-lb oxygen tank (good for one hour), a weighted belt, and a mask to cover eyes and nose, the diver could go about his job with little of the expense and encumbrance of more traditional operations. And absence of trailing lines and hoses greatly increased his mobility.

N. M. Newmark

Nathan M. Newmark to Head Illinois C. E. Department

Nathan M. Newmark, research professor of structural engineering, has been appointed head of the civil engineering department at the University of Illinois effective Sept. 1. He succeeds Prof. W. C. Huntington, who retired on completion of 30 years as head of the department.

Prof. Newmark is a leading authority on structural analysis and design, including elastic theory, arch bridges, concrete bridge floors, and the effects of bombs and earthquakes on structures. He is the author of more than 90 papers on structures and engineering mechanics.

For his work he has received the Croes and Moisseif awards of the American Society of Civil Engineers and the Wason Medal of the American Concrete Institute.

An active member of more than twenty professional societies and committees, he is chairman of the Engineering Mechanics Division of the ASCE and of the Applied Mechanics Division of the American Society of Mechanical Engineers.

Graduating in civil engineering from Rutgers University in 1930, Newmark that year joined the staff of the University of Illinois as a graduate assistant. He received his M.S. in 1932 and Ph.D. in 1934. He remained on the faculty and was appointed full professor in 1943. During World War II, he also served as consultant to the National Defense Research Committee and Office of Scientific Research and Development and was awarded the President's Certificate of Merit in 1948.

Road Builders Add Wiley and Gunn to Headquarters Staff

The American Road Builders Association has announced the addition to its headquarters staff of John E. Wiley and W. Guy Gunn.

Wiley, who has been appointed to head the Materials and Supplies Division of the ARBA, comes from the American Association of State Highway Officials. For AASHO he had been assistant executive secretary and editor of the association's publication, AMERICAN HIGHWAYS. Except for a term of service as a colonel in the army, Wiley's previous affiliations were with the Wyoming State Highway Department, where he served as right-of-way engineer, public relations engineer, motor vehicle director, and secretary to the commission.

Gunn has been retained by the ARBA as field director of the Contractors' Division, and in this capacity will head an aggressive membership extension campaign. He holds a degree in public relations, spent five years as superintendent of schools in Persall, Texas, ten years as a newspaper publisher and more recently was manager of the public works department of the Houston (Texas) Chamber of Commerce.

Macdonald, Waterbury Retire From Consulting Firm

Parsons, Brinckerhoff, Hall & Macdonald, consulting engineers, New York, has announced the retirement, as general partners, of Eugene L. Macdonald and Lawrence S. Waterbury. Both will continue to serve the firm as consultants, but Waterbury is also setting up his own consulting office at 26 Broadway, New York City. Macdonald will continue as chairman of the board of the partnership's sister corporation, Parsons, Brinckeroff, Hall & Macdonald, Inc. The remaining partners in the firm are now Maurice N. Quade, Walter S. Douglas, Alfred Hedefine, John O. Brickel, Rush F. Ziegenfelder and William H. Bruce, Jr.

N. C. Road Bureau Chiefs Have Announced Retirements

The retirements of R. Getty Browning chief locating engineer and W. E. Hawkins, state construction engineer, have been announced by the North Carolina Highway Department.

The two men will be succeeded respectively by Lloyd H. Cook, now senior locating engineer, and Hunter D. Irving, who has been a division engineer at Dunham.

Browning, who held his post with the department since 1941, will continue to serve the department as a consultant. Hawkins joined the department in 1921 and was state maintenance engineer from 1922 to 1926. He has held the post of construction engineer since 1926.

Men and Jobs Briefs . . .

• **Associations**—The Connecticut Society of Professional Engineers elects as president **Theodore Bratton** of Norwich, Conn . . . The Portland Cement Association announces the following new positions: **Charles W. Reene,** Director of Educational Services; **Leo H. Corning,** Director of Promotion Planning and Engineering Services; **George H. Paris,** Assistant to the Vice President for Promotion; **Clifford C. Carlson** to head the new Fire Research Section; **Joseph J. Shideler,** Manager, Products and Applications Section.

• **Careers**—Former chief of the Division of Sanitary Engineering, South Carolina State Board of Health, **J. H. Stephens,** accepts employment with the Harwood Beebe Company, civil and municipal engineers located in Spartanburg, South Carolina.

• **Business**—The Chemical Construction Corporation, a subsidiary of Electric Bond and Share Company, elects **John A. Handy Jr.** as vice president of finance and controller . . . **David H. Matson,** president and general manager Cia. Impulsora de Empresas Electricas, S. A., is elected a vice president of American & Foreign Power Company, Inc.

Intrusion-Prepaket, Inc., Cleveland, Ohio names **Richard D. Murphy** as manager of its newly established New England district located in Boston, Mass.

• **Retirements—Judson L. Robertson, Jr.,** Sanitary Engineer Director, Chief of Commissioned Reserve Development at Washington headquarters, United States Public health Service, after 31 years of service . . . **L. E. Johnson,** city utilities superintendent at Wilson, N. C., after 28 years with the city . . . **Col. N. A. Matthias,** district engineer for the Corps of Engineers at Seattle, Wash., after 30 years of service with the Army.

Obituaries

Roscoe H. Suttie, 70, Professor Emeritus of Civil Engineering at Yale University, died July 31 at New Haven, Conn. During his 38-year career as an educator at Yale, Mr. Suttie devoted the bulk of his efforts to sanitary engineering courses and the sociological aspects of public health. He also served for many years as director of the university's summer engineering camp.

Active in the consulting field, Mr. Suttie served as a consultant for a number of sewage treatment plants and water supply systems as well as for the Connecticut Commission of Reorganization of State Departments. He held membership in many professional societies, including the executive committee of the sanitary engineering division of ASCE and the American Society for Engineering Education.

Mr. Suttie graduated from Yale Sheffield Scientific School in 1913.

Harold Kindred, 62, administrative assistant in the planning and research division of the Colorado Highway Department, died August 3. He had been with the department for 20 years.

Kenneth M. Banks, 54, president and owner of Midland Asphalt Corp. and Banks Bros. Construction Co., both of North Tonawanda, N. Y., died August 5. He was a graduate of Rensselaer Polytechnic Institute.

Elbert Howard Catlin, 83, retired chief engineer of the Texas Co. died August 13 at Thomston, Conn. He headed the engineering division of the Texas Co. at Houston from 1906 until his retirement in 1939. A graduate of Yale University in 1896, Mr. Catlin worked throughout the Americas, and assisted in the building of several railroads in Cuba and Mexico before joining the Texas Co.

Arthur H. Diamant, 78, civil engineer, who for many years was vice president of the Rosoff Subway Construction Company, died in New York August 14. An honor graduate of the College of the City of New York in 1897, he supervised the construction of the first section of the Sixth Avenue line of the Independent Subway System.

J. T. Voshell, 82, retired division engineer, U. S. Dept of Commerce, Bureau of Public Roads, died July 21 at Martinsville, Indiana. A graduate of Indiana University and Purdue University, he was with the bureau from 1906 until he retired in 1947.

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

† **N. H., Manchester**—NATIONAL GUARD FACILITIES—BA On Or About 9/13—U. S. Eng., 150 Causeway St., Boston 14, Mass., airfield pavements, roads, parking areas and utilities, Air National Guard, Grenier Air Force Base, ENG-19-016-57-41. $850,000-$950,000. Plans deposit $10. CD 2/6.

† **Mass., Attleboro**—RESERVE TRAINING CENTER—BA On Or About 9/14—U. S. Eng., 150 Causeway St., Boston, Zone 14, U. S. Army Reserve Training Center, Eng. 19-016-57-36. $100,000-$200,000. Plans deposit $10.

▲† **Massachusetts**—BA On Or About 10/4—U. S. Eng., 111 E. 16 St., New York 3, N. Y., Flood Control Project Unit No. 5, North Adams. $3,000,000-$5,000,000. Alexander Potter Assocs., 50 Church St., New York 7, N. Y., engrs. CD 8/19/55.

▲† **Massachusetts**—BA On Or About 10/8—U. S. Eng., 111 E. 16 St., New York 3, N. Y., Flood Control Project Unit 6, North Adams. $3,000,000-$5,000,000. Tippetts, Abbott, McCarthy & Stratton, 62 W. 47 St., New York 17, N. Y., engrs. CD 8/19/55.

BUILDINGS—BA

Mass., Chelsea—ARMORY AND BATTALION HEADQUARTERS—BA 9/10—Commonwealth of Mass., Armory Comm., 905 Commonwealth Ave., Boston, 2 unit armory and battalion headquarters, Eleanor St., approx. $400,000. Plans deposit $50. Bradford & Weed, 145 Munroe St., Lynn, archts. CD 7/18, under LB.

Vt., Middlebury—DORMITORY—BA 9/18—Middlebury College, F. D. Chaffee, supt. Bldgs & Grounds, Service Bldg., mens' dormitory. $500,000. Freeman, French & Freeman, 158 Bank St., Burlington, archts., CD 3/14.

▲ **Conn., West Hartford**—SCHOOL—BA 9/25—Town, 51 Memorial Rd., West Hartford, general contract: Richland Lane Elementary School. $1,250,000. Jeter & Cook, 36 Pearl St., Hartford, archts. Paul D. Bemis, 36 Pearl St., Hartford, engr. CD 3/14, under LB.

BUILDINGS—SLC

▲ **Mass., Salem**—ACCOUNTING—New England Telephone & Telegraph Co., 185 Franklin St., Boston, (soon let contract); 2 story, 146x202 ft., revenue accounting bldg.; St. Peter, Federal and Ash Sts., $1,000,000. Cram & Ferguson, 248 Boylston St., Boston, archts.

HEAVY CONSTRUCTION—LB & CA

† **Edward R. Marden Corp.**, 233 Harvard St., Brookline, Mass., LB $353,000, est. $236,846, Schedule "B", facilities, Portsmouth, N. H., Topsfield, Me. and Bridgewater, Me. ENG-19-016-57-13. NEW HAMPSHIRE and MAINE. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Aug. 14. CD 7/31.

NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord,

R. G. Watkins & Son, Inc., Mill Yard, Amesbury, Mass., LB $311,606, surf. treated crushed gravel hy. 2.173 mi. and 64 ft. bridge, N. H. 28, Barnstead. Bids Aug. 16. CD 8/8.

▲ **Coker Constr. Co.**, 430 WOW Bldg., Omaha, Neb. LB $3,287,277. Proj. No. 243, Malden Tunnel Sect. A of spot Pond Brook flood control, Malden, MASSACHUSETTS. Commonwealth of Mass., Metropolitan Dist. Comm., Constr. Div., 20 Somerset St., Boston, Mass. Bids Aug. 16. CD 7/31.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Berke Moore Co., Inc., 8 Newbury St., Boston, Mass. CA $6,509,888, est. $6,119,946, Proj. I-352 (1) Contr. "M" Express Hy. Central Artery, Kneeland to Dover St., Boston. CD 8/8, under LB.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

T. E. O'Neill & Sons Constr. Corp., Box 868, Holyoke, Mass. CA $844,663, est. $973,925. Constr. No. 1 bridge superstructure, Rte. 202 over Connecticut River, Holyoke and South Hadley. CD 8/6, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Mount Vernon Bridge Co., Mount Vernon, O. CA $2,195,895, est. $1,800,000. Contr. No. 2, furnish, erect structural steel bridge, etc., Holyoke and South Hadley. CD 8/2, under LB.

▲† **B. Perini & Sons, Inc.**, 73 Montwait Ave., Framingham, Mass., LB $1,557,400. Buffumville Dam, etc. Little River, Charleston, CIVENG-19-016-57-2, MASSACHUSETTS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Aug. 17. CD 7/19.

Town, Dpt. P. Wks., 1 Lafayette St., Wakefield, Mass., Own Forces. $50,000. water mains, Green St., Montrose Ave., West Water St., WAKEFIELD, MASS. CD 4/27/55.

BUILDINGS—LB & CA

Gerald E. Morrissey, 1st Natl. Bank Bldg., Bennington, Vt., LB $893,180, est. $190,000. HOSPITAL alterations, addns., BENNINGTON, VT. Henry W. Putnam Memorial Hospital, Dewey St., Bennington, Vt. Bids Aug. 14. CD 7/25.

Owner, c/o Adams & McDonald, 231 Worcester Rd., Framingham, Mass. Owner Builds. Approx. $350,000. RESIDENTIAL DEVELOPMENT, "Hawthorne Acres," 22 homes, east Union St., ASHLAND, MASS.

▲ **M. S. Kelliher Co.**, 294 Washington St., Boston, Mass., LB $1,830,431. M-761, ADMISSION TREATMENT BLDG., State Hospital, MEDFIELD, MASS. State Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncey St., Boston, Mass. Bids Aug. 17. CD 8/2.

City, 70 Coddington St., Quincy, Mass. rejected bids Aug. 3, Myles Standish Elementary SCHOOL, East Squantum St., QUINCY, MASS. Will re-advertise. CD 8/8, under LB.

Gilbane Building Co., 90 Calverley St., Providence, R. I., CA, $580,000. WAREHOUSE ADDN., 275 Ferris Ave., EAST PROVIDENCE, R. I. First National Stores, Inc., 275 Ferris Ave., East Providence, R. I. CD 10/4/48.

▲ **J. S. Mason Co.**, P. O. Box 145, Willimantic, Conn., LB $1,759,000. (2 bidders) Regional HIGH SCHOOL, HEBRON, CONN. Towns of Hebron, Andover and Marlborough, Regional Bd. Educ., Hebron Elementary School, Hebron, Conn. Bids Aug. 7. CD 7/31.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **N. Y., New York**—BA 9/11—Bd. Water Supply, 120 Wall St., New York, Cont. 462, access roads, bridges, appurtenances structures, Cannonsville Dam, Delaware Co. CD 1/27/50.

N. Y., Bethlehem—BA 9/14—Bd. Water Comrs., Town Hall, Town of Bethlehem, Delmar, sub-structure and super-structure for 1.5 m.g.d. filter plant, incl. laboratory equip., appliances, entrance roadway, etc., at both water treatment plant and softener plant, site grading, seeding, connections to existing mains, etc. Plans deposit $30. Benjamin L. Smith & Assocs., 11 N. Pearl St., Albany, engrs.

† **NEW YORK**—GENERATOR BLDGS.—BA 9/27—U. S. Eng., 111 E. 16 St., New York, Zone 3, generator bldgs., New York and Niagara area. $100,000-$500,000. James P. O'Donnell, 39 Broadway, New York, Zone 6, archt. CD 7/19/55.

BUILDINGS—BA

N. Y., Bedford Hills—SHOP—BA 9/13—Bureau Contracts & Accounts, Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany, constr. heating, sanitary and electric work for maintenance shop (Bldg. 95) incl. service connections and impr. grounds, Westfield State Farm, Spec. 19542, 19543, 19544, 19545. Plans deposit $20 constr., $5 heating, $10 each sanitary and elec.

† **N. Y., Ogdensburg**—TRAINING CENTER—BA On Or About 9/26—U. S. Eng., 111 E. 16 St., New York, Zone 3, 200-man unit Army Training Center. $100,000-$500,000. Michael J. DeAngelis, 522 Fifth Ave., New York, Zone 36, archts. CD 6/29, under LB.

BUILDINGS—SLC

Pa., Phila.—WAREHOUSE, etc.—Kraft Foods Corp., 500 N. Peshtigo Court, Chicago, Ill., soon let contract: 1 story warehouse, 2 story, 200x400 ft., brick, steel office and cooler bldgs. $750,000. Howard Tonsager, 500 N. Peshtigo Court, Chicago, Ill., archt. (a NEW YORK. CD 6/18.

▲ **Pa., Scranton**—HOSPITAL—Mercy Hospital, 746 Jefferson Ave., soon lets contract, 1 story, brick, steel hospital addns., alterations. $2,000,000. George Yundt, 405 Linden St., engr.-archt.

HEAVY CONSTRUCTION—LB & CA

▲ **Hendrickson Bros.**, 63 N. Central Ave., Valley Stream, N. Y. LB $2,837,205 (1 bidder) lateral sewers, Lake Success-Herricks area, town of North Hempstead, Sewage Collection Dist. No. 2-NHP. Contr. No. 1002-2-NHP-3, MINEOLA, N. Y. A. Holly Patterson, Co. Exec., Nassau Co., Old County Court House, Mineola, N. Y. Bids Aug. 14. CD 7/25.

Onondaga Pub. Wks. Comm., County Court House, Syracuse 2, N. Y., cancelled bids to have been opened July 26, West side force main, main pumping station of the West side Sanitary Dist. to Hiawatha Blvd., West Side Sanitary District Contr. No. 5, SYRACUSE, N. Y. CD 7/2.

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Union Bldg. & Constr. Corp., 631 Main Ave., Passaic, N. J., LB $319,003 (5 bidders) pavement widen. 1.978 mi. Rte. 23, Section 9C and 7C Borough of Franklin and Township of Hardyston, Sussex Co. Bids Aug. 14. CD 7/27.

PENNSYLVANIA—Pennsylvania Turnpike Comm., 11 N. Fourth St., Harrisburg,

Pa.—Hempt Bros., R.D. No. 1, Camp Hill, Pa., LB $105,728. curbing, drainage at interchanges Contr. 251, Carlisle, Gettysburg Pike, Harrisburg West and Harrisburg East, Contr. 251A, Lebanon-Lancaster, Reading and Morgantown;

Pa.—Worthington Constr. Co., Box 95, Line Lexington, Pa. LB $101,807. curbing, drainage at interchanges, Contr. 437, Valley Forge, Norristown, northeast and Fort Washington; Contr. 437 A, Willow Grove, Philadelphia and Delaware Valley. Bids Aug. 14. CD 7/31.

PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Western Pa. Asphalt Paving Co., 245 Race St., P.O. Box 499D, Meadville, Pa. CA $563,153. flexible base with bit. surf. 20 and 22 ft. wide, 5.42 mi., three prestressed precast rein.-con. bridges, wid'n. existing pavement with flexible base, surf. Oil City and Franklin, L. R. 60078, 60024, Venango Co. CD 8/10, under LB.

Harrison Constr. Co., 1101 Western Ave., Pittsburgh 33, Pa. CA $356,303. road reconstr., McKees Rocks and Forest Grove Rd. and McKees Rocks and Steubenville Pike Extension (Stowe and Kennedy Twps.), PITTSBURGH, PA. Bd. County Comrs., Allegheny Co., County Bldg., Pittsburgh, Pa. Bids July 24. CD 12/15/43.

DELAWARE—State Hy. Dpt., Hy. Dpt. Admin. Bldg., Dover,

James Julian Inc., 405 du Pont Rd., Elsmere, Del., LB $726,129. completion of Concord Pike as dual hy. from Talleyville to Pennsylvania Line, New Castle Co. Bids Aug. 15. CD 8/6.

BUILDINGS—LB & CA

▲ **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y., cancelled bids to have been opened Aug. 16, construct and finance Capehart Housing Proj., in Niagara Area, $1,000,000-$3,000,000; Capehart Housing Proj. AAA facilities, New York Area, $1,000,000-$3,000,000. NEW YORK, N. Y. CD 6/28.

▲ **Siegfried Constr. Co., Inc.**, 6 N. Pearl St., Buffalo, N. Y. CA Total Est. $2,000,000. foundation for newspaper publishing PLANT at Washington St. near Perry St., BUFFALO, N. Y. Buffalo Evening News, 214 Main St., Buffalo, N. Y. CD 4/6.

Sordoni Constr. Co., 459 Madison St., New York, N. Y. CA Est. $600,000. steel, masonry package FREIGHT TERMINAL, 280 ft. long freight section with 2

(Continued on page 56)

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	**Middle West**
Middle Atlantic	**West of Mississippi**
South	**Far West**

PROPOSED WORK

Water Supply	**Public Buildings**
Sewers, Waste Disposal	**Mass Housing**
Bridges	**Commercial Buildings**
Streets & Roads	**Industrial Buildings**
Earthwork, Waterways	**Unclassified**

In Those Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	**Federal Government**
▲	**Project of $1,000,000 or over.**
ENR	**Engineering News-Record**
CD	**Construction Daily**

For additional reports see Construction Daily.

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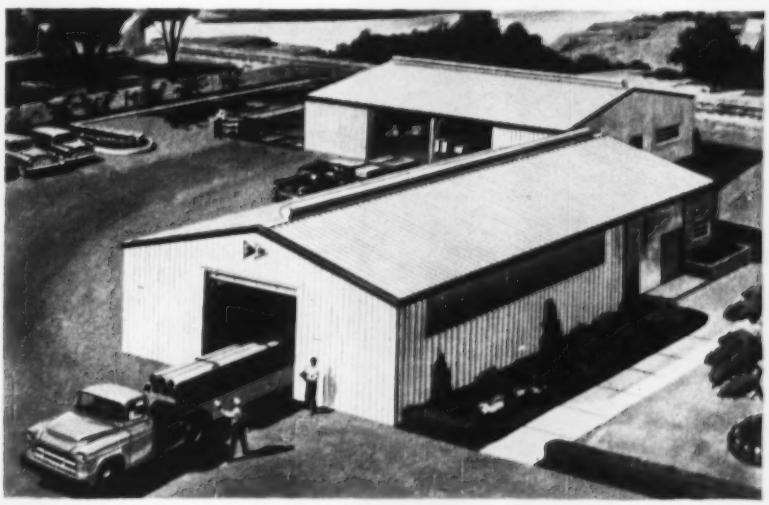

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(Continued from page 54)

platforms 30x610 ft., 60x160 ft. office, Reiman and N. Ogden Sts., East Boston, BUFFALO, N. Y. Delaware, Lackawanna & Western R. R., G. A. Philips, sh. engr., Hoboken Terminal, Hoboken, N. J. CD 5/18.

▲ **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y., cancelled bids to have been opened Aug. 16, construct and finance, Capehart Housing, $1,000,000-$3,000,000, FORT JAY, N. Y. CD 6/18.

U. S. Eng., 111 E. 16 St., New York 3, N. Y., cancelled bids to have been opened Aug. 16, construct and finance Capehart Housing, $500,000-$1,000,000, FORT TOTTEN, N. Y. CD 6/18.

Leon D. DeMatteis Constr. Corp., 827 Elmont Rd., Elmont, N. Y. CA $655,827, est. $650,000, addn. to Herrick School to convert to HIGH SCHOOL, NEW HYDE PARK, N. Y. Bd. Educ., Union Free School Dist. No. 9, Town North Hempstead, New Hyde Park, L. I., N. Y. CD 7/18, under LB.

▲ **Thomas A. Recine**, 3321 Eastchester Rd., New York, N. Y. Owner Builds, $2,700,000, 142 HOUSES, tract on Tiemann, Kingsland and Gunther Aves., NEW YORK, N. Y. Michael Alfano, 43 Westchester Square, New York 61, N. Y., archt.

Stella D'Oro Biscuit Co., Inc., 184 W. 237 St., New York, N. Y. Separate Contracts. Est. $350,000, baking PLANT addn. at Site, NEW YORK, N. Y. Ludwig P. Bono, 601 Tremont Ave., New York 57, N. Y., archt. CD 4/6.

Alban Realty Co., 125 E. 170 St., New York 52, N. Y. Separate Contracts. Est. $344,000, APARTMENT, 400-404 E. 58 St., NEW YORK, N. Y. CD 4/12.

† **Malan Constr. Corp.**, 2 Park Ave., New York, N. Y. CA $662,000, THERAPEUTIC EXERCISE CLINIC BLDG. 88, Veterans Admin. Hospital, NORTHPORT, N. Y. Veterans Admin., Munitions Bldg., Wash., D. C. CD 7/26, under LB.

Maple Tree Estates, c/o Walter H. Kremer, 13-00 Plaza Rd., Fairlawn, N. J., Owner Builds, $400,000, 20 HOUSES on tract at Paterson and Dorothy Sts. near Market Ave., FAIRLAWN, N. J.

James W. Gordon Jr., Green Ridge Lane, Gradyville, Pa. Separate Contracts. Est. $600,000, RESIDENTIAL DEVELOPMENT, incl. 40 units, Lacksley St., GLEN RIDDLE, PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **Ambassador Constr. Corp.**, 2006 Chestnut St., Phila., Pa. CA $3,500,000, 17 story, 130x185 ft., brick, masonry APARTMENT, 400 units, offices, 7 stores, garage, PHILA., PA. Owner c/o general contractor, DiStasio & Van Buren, 136 Liberty St., New York, N. Y., engrs.

George K. Heebner, Inc., 1231 Vine St., Phila., Pa. CA $950,000, 1 and 2 story, brick, stone, concrete 84,000 sq. ft. TV guide OFFICE, WAYNE, PA. Triangle Publications, Inc., 400 N. Broad St., Phila., Pa. Rosengarten & Kraemer, 10 S. 18 St., Phila., Pa., archt.-engrs.

▲ **Consolidated Engineering Co.**, 20 E. Franklin St., Baltimore 2, Md., CA $1,577,500, 9 story, brick, steel concrete MEDICAL DORMITORY, Broadway area adjacent to hospital, BALTIMORE, MD. Johns Hopkins University, Charles and 34 Sts., Baltimore 18, Md. Bids July 26, awarded July 27. CD 8/3, under LB.

▲† **Standard Constr. Co.**, 1010 Vermont Ave., N.W., Wash., D. C., LB $6,759,000; Alt. $6,769,000 (6 bidders) Arthur Clapper DWELLINGS, D. C. 1-20, 612 units between 2nd and 7th Sts. and Virginia Ave. and M Sts., S.E., WASH., D. C. National Capitol Housing Auth., 1729 New York Ave., N.W., Wash., D. C. Bids Aug. 16. CD 8/2.

Clute Brothers, Wyoming, Del., LB $459,900. Delaware State POLICE BLDG., north of DOVER, DEL. State Hy. Dpt., State Hy. Admin. Bldg., Dover, Del. Bids Aug. 1. CD 7/26.

▲ **E. I. duPont de Nemours & Co.**, Dupont and de-Nemours Bldgs., Wilmington, Del. Own Forces, $2,000,000, RADIATION, PHYSICS LABORATORY, at experimental station, WILMINGTON, DEL. CD 8/21/46.

James H. Wood, Dover, Del., CA $683,300. Caesar Rodney SCHOOL addn., WYOMING, DEL. Caesar Rodney Special School Dist., Wyoming, Del. Bids Aug. 1. CD 8/14; under LB.

SOUTH

HEAVY CONSTRUCTION—BA

Va., **Fairfax**—BA 8/28—Fairfax Co. Bd. Suprvs., Court House, Contract 61, integrated sewerage system, approx. 71,000 lin. ft. Keys and Russell Trunk and Collecting sewers. CD 12/22/53.

La., **New Orleans**—LOADING PIER, etc.—BA 9/20—City, City Hall; first phase, New Orleans Commercial Airport terminal bldg., incl. north loading pier and control tower at Moisant International Airport, $892,000. CD 12/16/55.

† **Ky., Frankfort**—SHOP—BA 9/28—Dpt. Army and Air National Guard, P. O. Box AA, Louisville, 1 story, 57x211 ft., 63x184 ft. state maintenance shop, paving, Capitol City Airport, $300,000. Oberwarth & Livingston, 321 Shelby St., Frankfort, archts. Staggs & Fisher, 508 Main St., Lexington, engrs. CD 6/20, under Public Buildings.

BUILDINGS—BA

Ga., Madison—SCHOOLS—BA 9/18—State School Bldg. Auth., 244 Washington St., S.W., Atlanta, Spring-field Elementary School (colored); Bostwick Elementary School (colored), Rutledge Elementary School (colored), Pearl High and Elementary School (colored), Bostwick Elementary School addns., mechanical remodeling to Rutledge Elementary School, Madison Elementary School; Morgan County High School addn. and Bucktead Elementary School addn., Morgan Co. Plans deposit $50. Wilfred L. Keel, 843 Peachtree St., N.E., Atlanta, archt.

Ga., Waycross—SCHOOLS—BA 9/20—State School Bldg. Auth., 244 Washington St., S.W., Atlanta, Ware County High School, Memorial Drive Elementary School, Hazard Hill Elementary School, Emerson Park Elementary School and Waresboro Elementary School in Ware Co. Plans deposit $50. Albany Architects & Engineers, P. O. Box 1778, Albany, archts.

▲ **Ky., Fort Knox**—HOUSING—BA 10/23—U. S. Eng., 830 W. Broadway, Louisville, 2,042 housing units, (Capehart), Eng. 15-029-56-87, $26,000,000. CD 8/17.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—Commonwealth of Va., Dpt. Hys., Central Hy. Office bldg., 1221 E. Broad St., Richmond,

Va.—**Adams Constr. Co.**, P. O. Box 60, Roanoke, Va., LB $188,937 (4 bidders) c. conc. 0.5 mi. Alt. Rte. 11 and 460. State Proj. 3580-70-71. Fed. Proj. US-129-2 (1), town of Salem;

Va.—**Arlington Asphalt Co.**, Box 9313, Rosslyn Station, Arlington 9, Va., LB $86,593 (1 bidder) b. conc. 1 mi. Rte. 244, State Proj. 2529-04. Fed. Proj. F-078-1 (11), Fairfax Co.;

Va.—**Kentucky-Virginia Stone Co., Inc.**, Box 137, Middlesboro, Ky., LB $249,492 (5 bidders) water bound macad., and pen. mac. top 1.46 mi. Rte. 58 State Proj. 1752-09-12, Fed. Proj. F-04-1 (3), Lee Co.;

Va.—**Moore Bros.**, P. O. Box 258, Verona, Va., LB $90,488 (2 bidders) soil aggregate, bit. surf. tr. 2.62 mi. Rte. 647, State Proj. 1378-04. Fed. Proj. S-264 (2), Rappahannock Co.;

Va.—**Moyer Constr. Co.**, P. O. Box 905, Staunton, Va., LB $132,641 (5 bidders) soil aggregate, bit. surf. tr. 4.52 mi. Rte. 600, State Proj. 1381-20. Fed. Proj. S-919 (1), Rockbridge Co.;

Va.—**Taylor Constr. Co.**, Kinsale, Va., LB $120,729 (3 bidders) crushed run aggregate, bit. surf. tr. 0.86 mi. Rte. 6. State Proj. 3137-16, Fed. Proj. S 528 (10) Goochland Co.;

Va.—**A. B. Torrence & Co., Inc.**, P. O. Box 217, Elkton, Va., LB $211,588 (5 bidders) soil aggregate base 2.36 mi. Rte. 20. State Proj. 2868-10-12-13, Fed. Proj. S-775 (3), Orange Co.;

Va.—**E. W. Woolfolk**, Box 111, Bolling Green, Va., LB $99,625 (1 bidder) soil aggregate, bit. surf. tr. 1.25 mi. Rte. 14, State Proj. 3757-06. S-944 (2), Mathews Co.;

Va.—**D. E. Worley Constr. Co.**, Rocky Mount, Va., LB $127,855 (5 bidders) soil aggregate, bit. surf. tr. 4.86 mi. Rtes. 681, 640, State Proj. 1331-10, Fed. Proj. S-796 (2), Floyd Co.; LB $180,420 (5 bidders) soil aggregate base, bit. surf. tr. 4.9 mi. Rte. 739, State Proj. 1333-15-19, Fed. Proj. S-980 (1), Franklin Co.;

Va.—**Clyde R. Royals, Inc.**, 350 W. Pembroke Ave., Hampton, Va., LB $84,636 (1 bidder) Schedule 510-56, Suffolk Dist. Bids Aug. 15. CD 8/3.

▲ **Pipe Line Maintenance Constr. Co., Inc.**, P. O. Box 56, Camp Hill, Pa., CA Est. $3,380,000, 28.8 mi. pipe line to reinforce natural gas supply from point north of Falls Church and connecting with existing mains near Hybla Valley Airport, Fairfax, VIRGINIA. Washington Gas Light Co., 1100 H St., N. W., Wash., D. C.

WEST VIRGINIA—State Road Comm., Charleston 5,

W. Va.—**Andersons', Inc.**, Box 3004, Charleston, W. Va. LB $163,303, b. conc. wearing course 6.85 mi. Hurricane-Hamlin Rd. at Hurricane. Proj. S 242 (11), Lincoln Co.; LB $74,184, b. conc. wearing course 4.264 mi. Hurricane-Hamlin Rd. at Hurricane, Proj. S 242 (12), Putnam Co.;

W. Va.—**Orange Constr. Co.**, Charleston, W. Va., LB $392,440, traffic bound base course, hot laid b. conc. wearing, bottom and base courses, guard rail 1.591 mi. Leon Arbuckle Rd. at Leon. Proj. F 232 (4), Mason Co. Bids Aug. 14. CD 8/6.

† **Hill Dredging Corp.**, 921 N. Missouri Ave., Atlantic City, N. J., CA $345,636, dredging at Sunny Point Army Terminal, ENG-51-075-56-77, SOUTHPORT, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids July 25. CD 6/27.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys. Frankfort,

Ky.—**W. C. Snider**, Danville, Ky. and **Greer Bros. & Young**, London, Ky. LB $1,421,373 (4 bidders) c. conc. 8.048 mi., Stanford-Somerset (US 27) Rd., F 502 (5), SP 69-90; Lincoln Co.;

Ky.—**K. K. Trucking Co.**, Olive Hill, Ky. LB $82,979 (2 bidders) bit. surf. Class C-1 7 mi., various roads, Carter Co.;

Ky.—**C. C. Hall**, Paintsville, Ky. LB $85,945. (3 bidders) reconstr., traffic bound limestone 3.485 mi., Right Fork of Greasy Creek Rd., RS 58-757, Johnson Co.;

Ky.—**Greer Bros. & Young**, London, Ky. LB $127,063 (4 bidders) reconstr., traffic bound limestone 4.288 mi. Lowmansville-Wiley Creek River Rd., RS 58-617, Johnson Co. LB $139,806. (3 bidders) reconstr., traffic bound slag 2.97 mi., Esco-Shelby Creek Rd., RS 98-53, Pike Co. Bids Aug. 101. CD 7/31.

▲ **TENNESSEE**—State Hy. Dpt., Nashville, rejected bids July 18, steel superstructure for Tennessee River Bridge at Chattanooga, U-072-1 (5), Hamilton Co. LB $4,344,044. CD 7/25.

▲ **TENNESSEE**—State Hy. Dpt., Nashville, Tenn.—**R. B. Tyler Co.**, 1446 Levering St., Louisville, Ky., CA $797,226, grading, drainage, paving, 5 bridges 11.171 mi. F-020-2 (9), Crocket Co;

Tenn.—**Harrison Constr. Co.**, Alcoa, Tenn. CA $1,158,802, grading, drainage, paving 4 bridges 4.536 mi. F-035-1 (3) Sevier Co. Bids July 18. CD 7/25.

BUILDINGS—LB & CA

Switzer Willing Constr. Co., Box 311, Lexington, Ky. CA Approx. $350,000, brick 50,000 bbl. WAREHOUSE, Proj. E-11-18, FRANKFORT, KY. Old Crow Distillery, Glenns Creek Rd., Frankfort, Ky., Engineering Div., National Distillers, 1265 Section Rd., Cincinnati 3, O. Bids July 6; awarded July 10.

J. D. Owen Constr. Co., 307 Arlington Ave., Nashville, Tenn. CA $581,614, Glencliff Junior HIGH SCHOOL, NASHVILLE, TENN. Davidson Co. Bd. Educ., Nashville, Tenn. CD 7/18, under LB.

MIDDLE WEST

BUILDINGS—BA

Mich., Southfield—SCHOOL—BA 9/17—Southfield Twp., Bd. Educ., 24675 Lahser Rd., Zone 19, elementary school 12 Mile Rd. near Santa Barbara, $400,000. Jensen & Keough, 15875 James Couzens Hy., Detroit, Zone 38, archts. CD 6/18.

HEAVY CONSTRUCTION—LB & CA

▲† **U. S. Eng.**, New Post Office Bldg., Pittsburgh, Pa., cancelled bids to have been opened Aug. 12, Nike Site 21 Richmond Height, Cuyahoga Co. Est. $1,250,000. OHIO. CD 7/26.

L. A. Wells Constr. Co., foot of W. 3 St., Cleveland 13, O., CA $325,000, est. $1,205,000 (4 bidders) 2,000 ft. 36 in. water intake line into Lake Erie, HURON, O. Village, Village Hall, Huron, O. Awarded Aug. 6. CD 6/5.

Rock Road Constr. Co., 5915 N. Rogers Ave., Chicago, Ill., CA $553,629, Contr. 14, connecting taxiway, Chicago International Airport, CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids June 29. CD 7/29, under LB.

▲ **Keeley Bros. Contg. Co.**, 4211 State St., East St. Louis, Ill., LB $1,006,239 (4 bidders) general contract, Proj. (A) swimming pool, impres. and equip., auto parking impvs. and sewer, water and gas sys. in Jones Park; Proj. (B) swimming pool, impres., equip. sewer, water and gas sys. impres., Lincoln Park, EAST ST. LOUIS, ILL. Bd. Park Comrs., East St. Louis Park Dist., P. J. Cronin, pres., 929 Missouri Ave., East St. Louis, Ill. Bids Aug. 16. CD 7/30.

▲ **WISCONSIN**—State Hy. Comm., State Office Bldg., Madison,

Joseph D. Bonness, Inc., 1409 N. 27 St., Milwaukee 8, Wis., CA $2,374,178. Cont. 1, c. conc. 1.933 mi. The North Port Washington Rd. (Lexington Blvd.-Daphne Rd.). U. S. Hy. 141. Proj. F 077-1 (10) and U 077-1 (11), Milwaukee Co. Bids Aug. 7. CD 8/15, under LB.

Dahlman Constr. Co., 4200 N 1st St., Milwaukee, Wis. CA $635,680, general contract, primate house at Zoological Park, MILWAUKEE, WIS. Milwaukee Co. Park Comn., Court House, Milwaukee, Wis. Bids July 18. CD 7/26, under LB.

MICHIGAN—State Purchasing Div., Dpt. Admin., Lewis Cass Bldg., Lansing,

Foot Pitt Bridge Works, 212 Wood St., Pittsburgh 22, Pa., CA $522,288, 214,000 lb. structural steel for bridge on Pasadena Ave. over relocation of US-23, B IN 82 of 25-7-3CI-RO (B IN 07-2-9), Genesee Co. Bids July 19. CD 7/9.

MICHIGAN—State Purchasing Div., Dpt. Admin., Lewis Cass Bldg., Lansing,

rejected bids July 19, 160,000 lb. structural steel for bridge on Maple Rd. over relocation US-23, 2 mi. south of Flint, B IN 8 7- of 25-7-4 C2 RO (B IN 07-27), Genesee Co. CD 7/9.

▲ **MICHIGAN**—State Hy. Comm., Stevens T. Mason Bldg., Lansing,

Mich.—**Cooke Contg. Co.**, 1116 Penobscot Bldg., Detroit, Mich., LB $235,367 (5 bidders) b. conc. 1.93 mi. US-16, U 82132C1-U (U258 20) Part 2, Highland Park, Wayne Co.; LB $211,858. (4 bidders) grading, drainage, structures, c. conc. 0.345 mi. M-59 M 50-21, C1-U (Proj. 50-28) Utica-Sterling, Macomb Co.;

Mich.—**Cadillac Asphalt Paving Co.**, 12490 Evergreen St., Detroit, Mich., LB $178,345. (6 bidders) b. conc. 2.483 mi. and 0.578 mi. Michigan Ave., F 82-24, C35-U (F245 221 Detroit, Wayne Co.; LB $79,769 (5 bidders) b. conc. 0.506 mi. US-25, F 82071 C1-U (82-190) (F130 11) Detroit, Wayne Co.;

Mich.—**Detroit Asphalt Paving Co.**, 432 Lafayette Bldg., Detroit, Mich., LB $369,603, est. $360,000. (5 bidders) b. conc. 4.152 mi. US-25 U 82072 C1-U (82-11) (U-180-27), Detroit, Wayne Co.;

Mich.—**Louis Garavaglia**, 24240 Mound Rd., Center Line, Mich., LB $393,110, est. $290,000 (5 bidders) b. conc. 3.48 mi. and 0.94 mi. U 82072 C2-U (82-31) U 212 20, U 8207-2-C3-U (82-31) U 180 27), Detroit, Wayne Co.;

Mich.—**Johnson-Greene Co. Contractors**, 416 E. Huron St., Ann Arbor, Mich., LB $1,041,602, est. $1,300,000 (16 bidders) aggreg. base course roadway 9.239 mi. US-131, M 67-22-C3-RN, Richmond-Lercy-Lincoln, Osceola Co.;

Mich.—**Loselle Constr. Co.**, 1555 Goddard St., Wyandotte, Mich., LB $1,809,788, est. $1,900,000 (16 bidders), c. conc. 5.06 mi. relocation of US 23, BIN 25-54, C3-RO (BIN 07-2 14) Vienna, Genesee Co.;

Mich.—**Angell Constr. Co.**, 2300 N. Good River St., East Lansing, Mich., LB $122,140, est. $110,000. (6 bidders) aggreg. surf. course 3.942 mi. FAS Route 985, Delt-Oneida, CS 23-50 C2 (S 985 1), Eaton Co.;

(Continued on page 58)

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to Engineers and Contractors . . .
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• tight joints—cuts infiltration, roots penetration and exfiltration.
• resilient joints — absorbs vibration and shock—minimizes effect of earth movement.
• "all-Transite" line — Transite Sewer Fittings with Ring-Tite assembly—(plus Transite Building Sewer Pipe).
• strength — tough — high crushing strength meets design requirements.
In installing a system
• light weight—economical to handle, truck, and lower into trench.
• long lengths — easy to line and grade — fewer joints to make — smaller installation crew.
• packaged joint — assembly fast, simple, sure . . . even under difficult conditions — no compounds and related equipment.
• easy-to-assemble fittings — also with speedy Ring-Tite assembly — no compounds or equipment — all Transite.
• easily made branch connections, too — holes for cut-ins quickly done right on job.

Select TRANSITE® for more economical, tighter sewerage systems . . .

Whether a new sewerage system is being planned or additions to an existing one are being made . . . engineer and contractor alike will find a combination of qualities in performance-proved Transite Sewer Pipe that will fit their individual needs. They will find this holds true whether the local conditions call for (a) tight joints to protect against root growth and infiltration of ground water or (b) the strength and flow characteristics that mean definite savings in the design stage, during trenching and installation, and in operation as well.

For further information about Transite Sewer Pipe, write for Booklet TR-165A, Johns-Manville, Box 14, New York 16, N.Y.

JM PRODUCTS

Johns-Manville TRANSITE SEWER PIPE

with the RING-TITE® Coupling

(Continued from page 56)

Mich.—**Peninsula Asphalt & Constr. Co.**, Traverse City, Mich., LB **$271,796**, est. $260,000 (6 bidders) b. conc., binder widen, 8.15 mi., Blair-Green Lake, M 28011, C1-R, Grand Traverse Co. Bids Aug. 8. CD 8/3.

▲ **MICHIGAN**—State Hy. Comn., Stevens T. Mason Bldg., Lansing.

Mich.—**W. H. Harvie, Inc.**, 24050 Telegraph Rd., Southfield, Mich., LB **$128,232**, est. $130,000 (11 bidders) rein.-con., steel bridge on Kensington Rd. and grading 500 ft., Brighton, Livingston Co.; LB **$191,871**, est. $190,000 (10 bidders) rein.-con. steel bridge on Pleasant Valley Rd., Brighton, IN 82, 47-2-4, C2-RN (04-4 13) Livingston Co.

Mich.—**E. J. Vender Veen Co.**, 2020 Newark St. S.E., Grand Rapids, Mich., LB **$135,364**, est. $140,000 (5 bidders) rein.-con., steel bridge over Green Lake Creek, Leighton, M 82 of 3-13-4 C1-RN, Allegan Co.;

Mich.—**L. A. Davidson Co.**, 213 E. St. Joseph St., Lansing, Mich., LB **$657,050**, est. $1,120,000, (11 bidders) 3 bridges over Relocation of US 23, 2 twin bridges at Barnet Run and Pine Run Creeks, Vienna, BIN 81 of 25-18-3, C2-RO, BIN 83 of 25-18-3, C2-RO BIN 84 of 25-18-3, C1-RO BIN 86 of 25-18-3, C2-RO (BIN 07-2 81 Vienna, Genesee Co.;

Mich.—**Owen-Ames-Kimball & L. W. Edison Co.**, 924 Floral Dr., S.E., Grand Rapids, Mich., LB **$120,652**, est. $120,000 (5 bidders) rein.-con. steel grade separation, 84 St. over Grand Rapids Expressway, Byron, BM 83 of 41-5-61 C1-RO, Kent Co. Bids Aug. 8. CD 8/3.

▲ **Reinger Constr. Co.**, 127 N. Cedar St., Lansing, Mich., LB **$1,118,000** general contract, upper deck of Stadium addn., Macklin Field, Michigan State University, EAST LANSING, MICH. State, A. N. Langius, dir. State Bldg., Lewis Cass Bldg., Lansing, Mich. O. J. Munson, 1110 S. Pennsylvania St., Lansing, archt.;

United Piping & Erecting Co., 3012 15 St., Lansing, Mich., LB **$135,680** mechanical work (East Lansing, Mich.);

Hall Electric Co., 11965 Sanford St., Muskegon, Mich., LB **$109,999** electrical work (East Lansing, Mich.)

BUILDINGS—LB & CA

▲ **Harry J. Forepaugh Sons, Inc.**, 1727 E. 31 St., Bedford, O., CA **$1,980,322** general constr., HIGH SCHOOL ADDN., BEDFORD, O. Bd. Educ., 91 Tarbell St., Bedford, O. Bids Aug. 8, awarded Aug. 13. CD 8/16, under LB.

J. D. Jennings Corp., 311 E. Barbee St., Louisville, Ky., CA **$505,238** (7 bidders) Southeastern Extension Indiana University CENTER ADDN., JEFFERSONVILLE, IND. Indiana University, Bloomington, Ind. Bids Aug. 2, awarded Aug. 10. CD 7/19.

▲ **John Wile Constr. Co.**, 826 Hunter Ave., Louisville, Ky., LB **$1,346,000** (7 bidders) HOSPITAL alterations, addns., JEFFERSONVILLE, IND. Clark County Memorial Hospital, Sparks and Missouri Aves., Jeffersonville, Ind. Bids July 31. CD 7/2.

▲ **Garr Builders**, 4727 N. Monticello Ave., Chicago, Ill., LB **$1,046,902**, Longfellow Grade SCHOOL addn., 525 Jackson Blvd., OAK PARK, ILL. School Dist. 97, 122 Forest Ave., Oak Park, Ill. Bids Aug. 9. CD 7/31.

▲ **D'Arcy Leck Constr. Co.**, 2838 Stevens Ave., Minneapolis, Minn., LB **$1,074,888** (6 bidders) 4 story HOSPITAL, APPLETON, WIS. Appleton Memorial Hospital Assn., 106 W. Washington St., Appleton, Wis. Bids Aug. 14. CD 7/23.

▲ **Spence Brothers**, 417 McCoskry St., Saginaw, Mich. CA **$1,245,000**. Proj. No. 80, Henry S. Friese Bldg. addns., alterations, University of Michigan, ANN ARBOR, MICH. The Regents of University of Michigan, W. K. Pierpont, vice pres., Plant Service Bldg., Ann Arbor, Mich. CD 7/23, under LB.

▲ **Artisan Home Builders**, 17311 Wyoming St., Detroit, Mich. Owner Builds. Est. **$8,100,000**. Lewis Manor Subdivision incl. 450 brick HOMES, Ford and Inkster Rds., Dearborn Twp., DEARBORN, MICH.

▲ **R. E. Dailey & Co.**, 9900 Northlawn St., Detroit, Mich. CA Est. **$1,000,000**. WAREHOUSE, DETROIT, MICH. Ralph E. Dailey, 13600 Fullerton St., Detroit, Mich.

▲ **Cranbrook Constr. Co.**, 18116 James Couzens Hy., Detroit, Mich. Owner Builds. Est. **$1,700,000**. Cloverdale Development 100 HOUSES, Joy Rd. and Hubbard Dr., NANKIN, MICH.

▲ **Garrison Homes, Inc.**, 25136 Schoolcraft St., Detroit, Mich. Owner Builds. Est. **$1,500,000**. 100 brick HOMES with Tornado Shelters, Dixie South of Schoolcraft, REDFORD, MICH.

Christopher Constr. Co., 15124 E. Jefferson St., Grosse Pointe, Mich. CA **$435,489** general constr. West Unit addn. to South Lake HIGH SCHOOL, ST. CLAIR SHORES, MICH. Bd. Educ., South Lake School Dist., 23700 Mack Ave., St. Clair Shores, Mich. Bids July 18. CD 6/27.

▲ **George H. Glover, Inc.**, 3001 N. Adams St., Bloomfield, Mich. Owner Builds. Est. **$6,000,000**. 230 brick HOMES on ½ acre sites, 16 Mile and Adams Rds., section, TROY, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Wyoming**—BA 10/16—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver 2, Colo., furnishing two 33,500-h.p. 257-rpm, vertical shaft, single-runner, Francis-type hydraulic turbines for Fremont Canyon Power Plant, Missouri River Basin Proj. Inv. DS 4750, adv. ENR 8/30. CD 9/12/56.

BUILDINGS—BA

▲ **Tex., Lubbock**—DORMITORY, etc.—BA 9/5—Texas Technological College, Lubbock, 2 story, brick women's dormitory and dining hall, $600,000-$1,500,000. Extended date, Atcheson, Atkinson & Cartwright, Sanford Bldg., archts. CD 7/31.

▲ **Colo., Denver**—HOSPITAL—BA 9/6—Children's Hospital, 1825 Downing St., Children's Hospital addn. $1,750,000. Roland L. Linder, Insurance Bldg., archt. Phillips-Carter-Osborn, 602 Insurance Bldg., Zone 2, engrs. CD 3/16/53.

▲ **Minn., Golden Valley (P.O. Minneapolis)**—WAREHOUSE, etc.—BA 9/17—Minneapolis-Honeywell Regulator Co., 2745 Fourth Ave. S., Minneapolis, 263,000 sq. ft. central warehouse and mfg. plant, west of Douglas Dr. and north of Minneapolis, Northfield and Southern R.R. tracks. $3,000,000. Extended date Ellerbe & Co., E. 505 First Natl. Bank Bldg., St. Paul, archts. CD 8/16.

▲† **Kan., Fort Leavenworth**—ACADEMIC—BA On Or About 10/5—U. S. Eng., 1800 Federal Office Bldg., Kansas City, Zone 6, academic bldg., ENG-23-028-57-16. Plans deposit $25. CD 1/25.

▲ **Tex., Texas City**—REFINERY—Bids Asked—American Oil Co., Texas City, ultraformer refinery unit. $2,750,000. CD 8/14.

HEAVY CONSTRUCTION—LB & CA

Interstate Constr. Corp., 3621 Troost Ave., Kansas City, Mo. LB **$459,900**. WW impres., modification of presedimentation basins, effluent flumes, control chambers, water supply, drainage structures, yard piping, Contr. C 147, KANSAS CITY, MO. City, City Hall, Kansas City, Mo. Bids Aug. 13. CD 1/30/56.

▲ **SOUTH DAKOTA**—State Hy. Dpt., Pierre, S. D.—**W. H. Nord Co.**, Jamestown, N. D., CA **$530,616.** 13.829 mi. F-493 (2), Stanley Co.;

S. D.—**Northwestern Eng. Co.**, 1311 St. Joe St., Rapid City, S. D., CA **$1,356,560**. 7.273 mi. IN 88 (7), Meade Co. Bids July 17. CD 7/27, under LB.

▲ **SOUTH DAKOTA**—State Hy. Dpt., Pierre,

Massman Constr. Co., 3917 Broadway, Kansas City, Mo., CA **$1,224,401**, substructure for 4,583 ft. bridge 0.868 mi. WAR 181 (2), Dewey and Potter Counties. Bids July 17. CD 7/27, under LB.

TEXAS—State Hy. Comn., Austin,

Tex.—**J. B. Griffin**, 104 Richmond Dr., Waxahachie, Tex., LB **$110,187**, bridge and approaches 0.968 mi. Hy. FM 983, 660. Proj. S 1451 (2), C 1048-2-11, Ellis Co.;

Tex.—**Cage Bros.**, 6959 San Pedro St., San Antonio, Tex., LB **$309,942**, 0.984 mi. Frio River, Frio River Slough, Live Oak and Hondo Creek Bridges Hy. FM 344 Proj. R 276-7-3. Frio Co. Bids Aug. 14. CD 7/25.

TEXAS—State Hy. Comn., Austin,

W. Paul Carlisle, P. O. Box 13104, Dallas, Tex., LB **$501,505**, 2.861 mi. Trinity River Bridges and approaches, Hy. FM 1129 and 85. Proj. S 1372 (5) and S 219 (3), Navarro and Henderson Counties. Bids Aug. 15. CD 8/6.

TEXAS—State Hy. Comn., Austin,

cancelled bids to have been opened Aug. 14, 2.743 mi. Hogs, Repress, Fish Lake, Log, West Socagee and East Socagee Bridges and approaches, Hy. US 79. Proj. F 006 (7), Panola Co. CD 7/25.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**W. L. Barnes**, 5607 Adams St., Austin, Tex. and **John T. Leslie**, Bailey, Tex., LB **$631,233**, grading, structures, base, surf. 34.603 mi. Hy. FM 379. Proj. S 1595 (1) and S 1804 (1), Sterling, Tom Green and Irion Counties;

Tex.—**John F. Buckner & Sons**, P. O. Box 76, Cleburne, Tex., LB **$131,847**, grading, structures, base, surf. 8.653 mi. Hy. FM 1902 and 1187. Proj. S 1778 (1) and S 1778 (2), Johnson and Tarrant Counties;

Tex.—**J. M. Dellinger Inc.**, P. O. Box 4227, Corpus Christi, Tex., LB **$196,405**, grading, structures, foundation course and surf. 16.536 mi. Hy. SH 9. Proj. F 789 (7), Live Oak Co.;

Tex.—**F. & C. Engineering Co. Inc.**, P. O. Box 2426, Houston, Tex., LB **$1,479,596**, grading, structures, cement stabil. base course, traffic signal sys. 1.04 mi. Hy. SH 73. Proj. I 1052 (32) and IG 1052 (33), Harris Co.;

Tex.—**Foley & Williams**, 243 Owen Bldg., Tyler, Tex., LB **$249,555**, grading, structures, base, surf. 13.051 mi. Hy. FM 2256. Proj. S 2107 (2), Marion and Harrison Counties;

Tex.—**Gaylord Const. Co.**, 803 Blodgett St., Houston, Tex., LB **$84,439**, grading, structures, base, surf. 1.915 mi. Hy. FM 1088. Proj. R 1106-2-4, Austin Co. LB **$198,978**, hot mix b. conc. 9.166 mi. Hy. US 59. Proj. C 27-8-40, Fort Bend Co.;

Tex.—**Fred Hall & Son**, P. O. Drawer 488, Valley Mills, Tex., LB **$130,286**, grading, structures, base, surf. 5.053 mi. Hy. FM 2305. Proj. R 232-5-1, Bell Co.;

Tex.—**Kerr & Middleton**, P. O. Box 5065, Lubbock, Tex. LB **$94,302**, grading, sstructures, base, surf. 10.572 mi. Hy. FM 1718. Proj. S 1579 (2), S 2018 (1) and S 2017 (1), Dawson Co.;

Tex.—**L. H. Lacy**, 5630 Yale Blvd., Dallas, Tex. and **Norman L. Larson**, P. O. Box 546, Austin, Tex., LB **$992,277**, grading, structures, c. conc., 2.696 mi. Hy. US 75. Proj. I 569 (12) and I 562 (3), Navarro Co.;

Tex.—**Ernest Loyd**, P. O. Box 1120, Fort Worth, Tex. LB **$1,185,243**, grading, structures, flexible base, hot mix b. conc., 10.243 mi. Hy. US 81. Proj. I 113 (18) and F 113 (19), Hilal Co.; LB **$155,969**, grading, structures, foundation course, one course surf. tr. 6.862 mi. Hy. SH 236. Proj. S 2097 (1), Coryell Co.; LB **$427,721**, grading, structures, flexible base, b. conc. 9.431 mi. Hy. US 69. Proj. F 647 (3), Hunt Co.; LB **$143,843**, grading, structures, base, surf. 5.455 mi. Hy. FM 546. Proj. R 1013-1-4, Collin Co.;

Tex.—**Moore Bros. Constr. Co.**, P. O. Box 35, Lufkin, Tex., LB **$310,917**, grading, structures, base, surf. 7.407 mi. Hy. FM 2296, Proj. S 2131 (1), Walker Co.;

Tex.—**L. W. Pelphrey Co.**, P. O. Box 951, Gladewater, Tex. LB **$169,306**, grading, structures, base, surf. 5.845 mi. Hy. FM 49, Proj. S 893 (3), Wood and Upshur Counties;

Tex.—**Dan Pennington**, P. O. Box 13, Grapeland, Tex., LB **$287,804**, grading, structures, flexible base, two course surf. tr. 13.446 mi. Hy. SH 21. Proj. F 254 (6), Houston Co.;

Tex.—**Perry Const. Co.**, 501 Insurance Bldg., San Antonio, Tex. LB **$186,897**, grading, structures, base, surf. 3.048 mi. Hy. FM 204. Proj. S 770 (2) and (3), Hood and Somervell Counties;

Tex.—**Henry L. Stafford**, P.O. Box 1047, Lubbock, Tex. LB **$118,521**, grading, structures, base, surf. 11.306 mi. Hy. FM 2571. Proj. R 2223-1-1, Andrews Co.;

Tex.—**Texas Bitulithic Co.**, P.O. Box 10365, Dallas, Tex. LB **$395,378**, grading, structures, flexible base, c. conc., two course surf. 7.818 mi. Hy. FM 157. Proj. C 94-2-17 and R 747-3-9, Tarrant Co. Bids Aug. 14. CD 7/25 and 8/6.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Austin Asphalt Co.**, P.O. Box 1590, Dallas, Tex. LB **$456,513**, extend structures, widen and level up 9.557 mi. Hy. US 84. Proj. F 450 (5), Freestone Co.;

Tex.—**Cage Bros.**, 6959 San Pedro St., San Antonio, Tex. LB **$151,187**, grading, structures, base, surf. 6.544 mi. Hy. FM 2170, Proj. S 2133 (1), Collin Co. LB **$1,087,458**, grading, drainage, structures, grading separ. structures, flexible base 11.515 mi. Hy. US 77. Proj. I 487 (11) and IG 487 (12), Ellis Co.;

Tex.—**Callan Constr. Co.**, P. O. Box 3146, Waco, Tex. LB **$80,981**, grading, structures, base, surf. 6.748 mi. Hy. FM 935. Proj. R 752-4-5, Falls Co.;

Tex.—**Ivan Dement**, P.O. Box 1787, Amarillo, Tex. LB **$463,947**, widen structures, flexible, base and b. conc. pavement 19.831 mi. Hy. US 83, Proj. C 33-1, 2, 3, and 4-16, 7, 10 and 23 and C 106-5-14, Stonewall, Fisher and Jones Counties. LB **$991,565**, grading, structures, flexible base, b. conc. pavement 20.074 mi. Hy. US 87 and 287. Proj. F 1069 (3), Moore Co.;

Tex.—**F. & C. Engr. Co., Inc.**, P.O. Box 2426, Houston, Tex. LB **$985,261**, grading, cement stabil. base, conc. pavement and storm sewers 1.47 mi. Hy. US 90A. Proj. C 512 (24) and UG 512 (25), Harris Co.;

Tex.—**Foley & Williams, Contrs. and M. E. Dewberry**, 243 Owen Bldg., Tyler, Tex. LB **$358,760**, grading, structures 7.594 mi. Hy. SH 7. Proj. F 1092 (10), Robertson Co.;

Tex.—**Gulf Bitulithic Co.**, P.O. Box 2572, Houston, Tex. LB **$475,256**, flexible base shoulders, hot mix b. conc. pavement 3.746 mi. Hy. US 69. Proj. F 53 (19), Jefferson Co.;

Tex.—**Fred Hall & Son**, P.O. Box 488, Valley Mills, Tex. LB **$299,659**, grading, structures, base, surf. 16.038 mi. Hy. FM1771. Proj. S 1615 (2), S 1623 (2) and S 667 (1), Falls and Limestone Counties; LB **$121,034**, grading, structures, base, surf. 6.646 mi. Hy. FM 2258. Proj. S 1899 (1), Johnson Co.; LB **$341,728**, grading, structures, flexible base, two course surf. tr. 23.91 mi. Hy. SH 131. Proj. C 375-2 & 3-5 & 4, Maverick and Kinney Counties; LB **$205,829**, grading, structures, base, surf. 5.312 mi. Hy. FM 918. Proj. S 571 (3), Navarro Co.;

Tex.—**T. F. Jones Const., Inc.**, P.O. Box 5126, Lubbock, Tex. LB **$282,149**, grading, structures, base, surf. 21.27 mi. Hy. FM 145. Proj. S 1050 (7), Castro and Swisher Counties;

Tex.—**George Kies**, 1303 Robert E. Lee Rd., Austin, Tex. LB **$163,951**, grading, structures, base, surf. 10.917 mi. Hy. FM 2151. Proj. R 2014-1-2, Coleman Co.;

Tex.—**Ernest Loyd**, P.O. Box 1120, Fort Worth, Tex. LB **$84,301**, grading structures, base, surf. 4.007 mi. Hy. FM 2232. Proj. R 2222-2-1, Sherman Co.; LB **$471,859**, grading, drainage facilities, flexible base, b. conc. pavement 0.766 mi. Hy. US 377. Proj. F 300 (8), Tarrant Co.;

Tex.—**J. A. Long**, P.O. Box 180, McKinney, Tex. LB **$140,094**, grading, structures, base, surf. and c. conc. 2.939 mi. Hy. FM 543, Proj. S 920 (4), C 47-5-23, Collin Co.;

Tex.—**G. W. Perry**, 501 Insurance Bldg., San Antonio, Tex. LB **$279,364**, grading, structures, base, surf. 17.019 mi. Hy. FM 2293. Proj. S 2135 (1), Robertson Co.;

Tex.—**Perry Constr. Co.**, 501 Insurance Bldg., San Antonio, Tex. LB **$97,980**, grading, structures, base, surf. 7.764 mi. Hy. FM 2333. Proj. R 2225-2-1, Runnels Co.;

Tex.—**Reynolds & Huff**, P. O. Box 88, Tyler, Tex. LB **$451,902**, grading, structures, flexible base, hot mix b. conc. 14.865 mi. Hy. US 69. Proj. F 554 (3), Smith and Cherokee Counties;

(Continued on page 60)

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To withstand the severe climate changes in Barre, Vermont, the Rock of Ages Corporation turned to Ruberoid Corrugated Asbestos for exterior siding in their modern, new plant. Resistant to acids, fumes, smoke and steam, Ruberoid Corrugated assures long life for any plant need. It is noncorrosive . . . fireproof . . . eliminates expensive painting maintenance . . . assures lower construction costs. Installation on skeleton frame construction means less expensive footings and framing. For roofing, siding or indoor partitioning, Ruberoid Corrugated Asbestos saves time and expense in construction, keeps maintenance at a minimum year after year.

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Corrugated Asbestos Installed by
Asbestos Erectors, Inc., Bound Brook, N. J.

(Continued from page 58)

Tex—Strain Bros., P.O. Drawer 1631, San Angelo, Tex. LB $276,715, grading, structures, grade separations, flexible base, two course surf. tr. 0.321 mi. Hy. US 80. Proj. I 444 (39), Nolan Co.; LB $473,194, grading, structures, flexible base, 6 conc. 21.643 mi. Hy. SH 349. Proj. S 309 (6) and S 1007 (2), Martin and Midland Counties.

Tex—Texas Bitulithic Co., P.O. Box 10365, Dallas, Tex. LB $826,401, grading, structures, storm sewers, c. conc., 2.22 mi. Hy. US 77. Proj. I 22 (12), Dallas Co. Bids Aug. 15. CD 7/25, 8/6.

TEXAS—State Hy. Comn., Austin,
cancelled bids to have been opened August 14, grading structures, flexible base, hot b. conc., 3.249 mi. Hy. Loop 13, Proj. I 1075, Bexar Co. CD 8/6.

† **COLORADO**—Bureau P. Rds., Dpt. Comerce, Bldg. 40, Denver Federal Center, Denver.

Hinman Brothers Constr. Co., 17 W. 56 St., Denver, Colo., LB $320,803, est. $281,815, grading, base for approaches to tunnel at Mesa Verde Park, Colo. Proj. 1F, Montezuma Co. Bids Aug. 15. CD 8/2.

BUILDINGS—LB & CA

Gettemeier Realty Co., 1735 S. Florissant Rd., Florissant, Mo. Owner Builds. $600,000. 60 ranch type RESIDENCES, St. Denis Court subdivision, FLORISSANT, MO.

Ryan Constr. Co., 2606 Taylor St., Omaha, Neb. CA $380,000. GRAIN ELEVATOR, addn., OMAHA, NEB. Omaha Flour Mill Co. (Colorado Mill & Elevator Co.) 29 and C Sts., Omaha, Neb.

James F. Beveridge, Russell, Kan., LB $672,800, (2 bidders) general constr., chronic-diagnostic treatment HOSPITAL addn., HAYS, KAN. Hadley Memorial Hospital, 7th and Oak Sts., Kays, Kan. Bids Aug. 1. CD 7/19.

Joe Maderak, 226 N. 7th St., Kansas City, Kan., Owner Builds. Est. $375,000. 20 brick block DWELLINGS, KANSAS CITY, KAN.

▲ **McCann Constr. Co.**, 1813 E. Lancaster St., Fort Worth, Tex., LB $6,557,567 (10 bidders) construct and finance, 535 HOUSING units (Capehart) Smoky Hill Air Force Base, SALINA, KAN. Base Procurement Office, Smoky Hill Air Force Base, Salina, Kan. Bids Aug. 2. CD 7/31.

▲ **J. M. Odom**, 914 Congress St., Austin, Tex., LB $969,914 (base bid); LB $1,783,360 with Alt. 3, 4, 5, and 6, State Health LABORATORY and ADMINISTRATION Bldg., AUSTIN, TEX. State Dpt. Health, 410 E. 5 St., Austin, Tex. Bids Aug. 15. CD 7/17; **Young & Pratt**, Fredericksburg Rd., Austin, Tex. LB $475,875. (base bid); LB $609,419 with Alt. 3, 4, 5, and 6. (Austin, Tex.).

▲ **Foster Wheeler Corp.**, 2305 Fannin St., Houston, Tex., CA $14,500,000, catlytic cracking REFINERY UNIT, BAYTOWN, TEX. Humble Oil & Refining Co., 1210 Main St., Houston, Tex. CD 7/9.

▲ **Refinery Engineering Co.**, Wright Bldg., Tulsa, Okla. CA $2,250,000. design and construct, exten. of REFINERY PLATFORMER UNIT and 4,500 bbl. UDEX REFINERY UNIT, CORPUS CHRISTI, TEX. Delhi-Taylor Oil Corp., Robstown Rd., Corpus Christi, Tex.

Centex Constr. Co., 4606 Greenville St., Dallas, Tex. Own Forces. $369,500, 34 DWELLINGS; $375,000, 30 DWELLINGS, area Oakland Hills, in Oak Cliff, DALLAS, TEX. CD 8/8.

▲ **Superior Electric Co.**, 2311 Caroline St., Dallas, Tex. CA $388,000, electrical contract for OFFICE, DALLAS, TEX. Exchange Park Co.; 6419 Maple Ave., Dallas, Tex. Bids July 18. CD 7/11.
Sam P. Wallace Co., Tower Petroleum Bldg., Dallas, Tex., CA $732,000, mechanical contract (Dallas, Tex.).

† **Wm. E. Goetz & Sons**, Box 7111, Hackberry Station, San Antonio, Tex., LB $383,651, alterations, improvements to BLDG. 407, OFFICERS' OPEN MESS, Inv. AIV 41-133-4a-139, FORT SAM HOUSTON, TEX. U. S. Govt., Purch. & Contg. Office, Bldg. 370, Fort Sam Houston, Tex. Bids Aug. 10. CD 9/16/54.

Garmon Constr. Co., N. P. Anderson Bldg., Fort Worth, Tex., CA Est. $500,000. 1 story, 52,000 sq. ft. brick, haydite block, cast stone trim BUSINESS CENTER, 3200 E. Lancaster St., FORT WORTH, TEX. J. E. Kykendall Co., 300 E. Collard St., Fort Worth, Tex. Wyatt C. Hedrick Co., 1200 T. & P. Bldg., Fort Worth, Tex., archt. Awarded Aug. 10.

Art Constr. Co., 706 Garden Oaks, Houston, Tex. Own Forces. $365,500, 22 brick DWELLINGS, HOUSTON, TEX. CD 8/15.

Prokop Building Co., Inc., 6903 Long Point St., Houston, Tex. Own Forces. $371,115, 18 DWELLINGS; $377,190, 24 DWELLINGS, HOUSTON, TEX. CD 7/25.

▲ **Frank W. Sharp, Builder**, 6302 Bellaire Blvd., Houston, Tex., CA $396,115, (D) 38 DWELLINGS; CA $345,150, (E) 25 DWELLINGS; CA $357,000 (F) 30 DWELLINGS, near San Jacinto, HOUSTON, TEX. Grand total $1,098,265. Frank W. Sharp, 6302 Bellaire Blvd., Houston, Tex. CD 8/17/55.

▲ **Spaw-Glass, Inc.**, 2411 Times Blvd., Houston, Tex. CA $503,161, four 2 story DORMITORIES and DINING HALL; CA $528,826, six 2 story DORMITORIES, HUNTSVILLE, TEX. Sam Houston State Teachers College, Huntsville, Tex. Bids Aug. 3. CD 8/14, under LB.

▲† **Robert E. McKee General Contractor, Inc.**, 221 Washington Ave., Santa Fe, N. M., CA $1,235,370. BUILDING Sandia Base, Contr. AT (29-2)-473, ALBUQUERQUE, N. M. Atomic Energy Comn., 4001 Gibson Bldg. S. E., Albuquerque, N. M. CD 8/2, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

Wash., Mercer Island—BA 9/10—Mercer Island Sewer Dist., 3030 78 Ave. S.W., 18,200 ft. 10- to 18-in. conc. and asbestos-cement trunk sewer and 1,250 ft. 16-in. c.i. underwater crossing and 1 pump station. Plans deposit $25. Carey & Kramer, 1917 1 Ave. S., Seattle 1, consult. engrs. CD 7/6/54.

BUILDINGS—BA

▲ **Calif., Hayward**—SCHOOL—BA 9/12—Hayward Union High School Dist., 22300 Foothill Blvd., 156,000 sq. ft. Tennyson High School, $2,700,000. Plans deposit $100. Anderson & Simonds, 2800 Park Blvd., Oakland, archts. Thomas Chace, 268 Market St., San Francisco, engr. CD 6/12.

▲† **Idaho, Arco**—ASSEMBLY AND MAINTENANCE—BA 9/12—Atomic Energy Comn., Idaho Operations Office, 150x285 ft., assembly and maintenance bldg. addn., Aircraft Nuclear Propulsion area of National Reactor Testing Station, Proj. AT (10-1)-837. $1,600,000. CD 8/7.

BUILDINGS—SLC

Calif., South San Francisco—BAKERY—Colonial Bakeries, 350 Grand Ave., soon let contract, 62,000 sq. ft.—concrete baking plant, $500,000. Donnell E. Jaekle & Donald G. French, 586 N. 1st St., San Jose, archts. CD 2/27.

HEAVY CONSTRUCTION—LB & CA

▲† **Strong Constr. Co.**, Springville, Utah, LB $1,156,224, first 5-mi. section of 25-mi. access road to Glen Canyon Dam, site from Bitter Springs, ARIZONA. Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo. CD 4/27, under Earthwork, Waterways.

† **Sorensen Constr. Co.**, Murray, Utah, LB $349,399, surf. 21 mi. South Entrance Road Grand Canyon National Park, Coconino Co., ARIZONA. National Park Service, Dpt. Interior, 19 and C Sts. N.W., Wash. 25, D. C.

▲ **WASHINGTON**—State Hy. Comn., Olympia,
MacRae Bros., 5900 1 Ave. S., Seattle 4, Wash., LB $456,565, steel girder bridge and rein.-con. rigid frame slab bridge for N. P. Ry. undercrossing and Eastside St. undercrossing, incl. clearing, drainage, grading; surf., Type I-1 b. conc., 0.199 mi. Primary St. Hy. 1 in Olympia; FAP Nos. IN-ING-001-2 (40) and BIN-001-2144, Thurston Co. Bids Aug. 14. CD 7/31.

WASHINGTON—State Hy. Comn., Olympia,
Wash.—Carbon Bros., N. 3430 Cook St., Spokane, Wash. LB $77,325, stockpiling maint. rock, crushed cover stone and mineral aggregates on State Hys. 10 and 5-P, Loup Loup Junction vicinity et al, Okanogan and Ferry Counties.
Wash.—Peter Kiewit Sons Co., Vancouver, Wash., LB $92,916, clearing, drainage, grading, surf. 0.191 mi. Primary St. Hy. 1, Allen St. in Kelso and Davis Terrace vicinities, Cowlitz Co.;
Wash.—C. E. Oneal, Ellensburg, Wash., LB $328,493, clearing, drainage, grading, constr. steel girder railway bridge and rein.-con. slab bridge 4.861 mi. Primary St. Hy. 11, Hatton Coulee to Lind Coulee, FAP No. F-FG 033-2 (4), Adams Co.;
Wash.—Strong & MacDonald, Inc., 4045 Ruston Way, Tacoma, Wash., LB $439,404, clearing, drainage, grading, ballasting ry. relocation and stockpiling crushed stone surf., ballast, mineral aggregates and C.T.B. aggregate Primary St. Hy. 3, Selah Creek north, FAP No. F-027-1 (2), Yakima Co.;
Wash.—Woodworth & Co., Inc., 1200 E. "D" St., Tacoma, Wash., LB $80,262, surf., c. conc. paving 0.102 mi. and treated timber pile trestle bridge with concrete deck over Dry Gulch, Bridge No. 1-V/101, Secondary St. Hy. 1-V, Pierce Co. Bids Aug. 14.

† **CALIFORNIA**—U. S. Forest Service, 630 Sansome St., San Francisco,
J. W. Briggs, Box 283, Bend, Ore., LB $645,301 (7 bidders) constr. approx. 1½ mi. timber access road in Shasta Trinity National Forest, Hirz Mountain Rd., Inv. 57-6, Shasta Co.

▲ **Matt J. Zaich Co.**, 6828 Farmdale Ave., North Hollywood, Calif., CA, $2,575,212, Proj. 46, Lincoln Blvd. and Indiana Ave., storm drain, Santa Monica, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 2250 Alacaaz St., Los Angeles, Calif. Bids Aug. 3, awarded Aug. 14. CD 8/7, under LB.

BUILDINGS—LB & CA

▲ **Del E. Webb Constr. Co.**, S. 23 Ave., Phoenix, Ariz. CA, $2,500,000. 250-room MOTOR HOTEL, PHOENIX, ARIZ. Flamingo Hotels, Inc., Sahara Hotel, Phoenix, Ariz.

▲ **James I. Barnes Constr. Co.**, Central Bldg., Seattle 4, Wash. LB $1,100,808. (5 bidders) 9 story MERCHANDISE MART OFFICE, SEATTLE, WASH. Pacific Warehouse Co., Terminal Sales Bldg., Seattle, Wash. Bids Aug. 16. CD 7/27.

▲ **Merritt Constr. Co.**, Fife, Wash., CA, $1,500,000. rein.-con. SHOPPING CENTER, incl. Rhodes Dpt. Store, TACOMA, WASH. Villa Plaza Development Co., Gravelly Lake Dr. and Lake Steilacoom Ave., Tacoma, Wash. CD 1/24, under Rhodes Bros. Department Store.

McDonald Bros., 2639 S. La Cienega Blvd., Los Angeles, Calif. LB $554,429 (5 bidders) ENGINEERING BLDG., 6352 N. Irvindale Ave., AZUSA, CALIF. Aerojet-General Corp., 410 N. Citrus Ave., Covina, Calif. Bids Aug. 7. CD 8/2.

▲ **R. J. Daum Constr. Co.**, 12537 S. Cerise Ave., Hawthorne, Calif. LB $1,049,566. (3 bidders) new SCHOOL and Hoffman and Rockwood SCHOOLS addns., CALEXICO, CALIF. Calexico School Dist., 7 and Herber St., Calexico, Calif. Bids Aug. 7.

▲ **Steed Bros.**, 714 Date Ave., Alhambra, Calif. CA $1,221,400. OFFICE, COMPTON, CALIF. The Pacific Telephone & Telegraph Co., 740 S. Olive St., Los Angeles, Calif. Bids July 17. CD 7/11.

▲ **Jack DeBell**, 1220 Middle Ave., Menlo Park, Calif., Owner Builds. $3,500,000. 160-HOME subdivision, GILROY, CALIF.

▲† **Al-Co Co., Inc.**, 5423 Flemish Village Lane, Los Angeles, Calif. LB $1,147,025, est. $1,000,000. (8 bidders) ENGINEERING and LABORATORY BLDG. for radio inertial facility, Jet Propulsion laboratory, ENG-04-353-57-7, PASADENA, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Aug. 15. CD 7/13.

▲ **McDonald Brothers**, 2639 S. La Cienaga Blvd., Los Angeles, Calif. LB $2,586,666. (5 bidders) South Bay SHOPPING CENTER, REDONDO BEACH, CALIF. Brody Investment Co., c/o Jones & Emmons, archts., 9825 Beverly Blvd., Los Angeles, Calif. Bids Aug. 14. CD 8/1.

Pacific Commercial Builders, 618 Woodside Rd., Redwood City, Calif. LB $397,670. rein.-con. Fairwood Elementary SCHOOL, SUNNYVALE, CALIF. Sunnyvale Elementary School Dist., c/o Supt., Sunnyvale, Calif. Bids Aug. 7. CD 7/19.

Leo L. Mallery Co., Inc., 1124 S. Beverly Dr., Los Angeles, Calif. Owner Builds. $404,600, 34 frame, stucco DWELLINGS, Hough, Ringate and Haimes Sts., WHITTIER, CALIF.

CANADA

BUILDINGS—BA

Ont., Goderich—HOSPITAL—BA 9/5—Alexandra Marine and General Hospital Bd., Goderich, 40-bed hospital exten. $500,000. Plans deposit $50. CD 6/19/50.

Ont., Ottawa—FREIGHT SHED, etc.—BA 9/6—Federal Dist. Comn., 241 Carling Ave., freight shed and office with platform at Hendman south of Russell Rd. and east of Alta Vista Dr. $650,000. Plans deposit $50.

HEAVY CONSTRUCTION—LB & CA

Forbes & Sloat, Ltd., 654 Union St., Fredericton, N. B. CA $387,792, standard grenade range, pontoon bldg., services magazine, etc., Training Camp, Camp Gagetown, FREDERICTON, N. B. Defence Const. Ltd., 56 Lyon St., Ottawa, Ont. Bids Aug. 2. CD 7/17.

Ellins Constr. Co. Ltd., 304 Scarlett Rd., Toronto, Ont., CA $546,793, b. conc. pavement wid'n. and storm sewer Bathurst St. from Wilson to Sheppard Aves., TORONTO, ONT. The municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 30, awarded Aug. 10. CD 8/10, under LB.

▲ **Pigott Constr. Ltd.**, 1250 Bay St., Toronto, Ont., CA $1,993,621 (7 bidders) Lawrence reservoir and pumping station, Caledonia Rd. annd Lawrence Ave W., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 23, awarded Aug. 13. CD 7/31, under LB.

▲ **Rayner-Atlas, Ltd.**, 46 Eglinton Ave. E., Toronto, Ont., CA $1,071,275, 3,833 ft. 93 ft. 3 in. concrete sewer in tunnel, Dufferin to Beechmount St. then north to Glengrove Ave., TORONTO, ONT. The Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 16, awarded Aug. 10. CD 7/31, under LB.

Atlas Constr. Co., Ltd., 4781 St. Catherine St. W., Montreal, Que., LB $864,908, constr. annd maintenance temporary approach to Honore Mercier Bridge and demolitions on route in Lachine Sect. of St. Lawrence Seaway, Lachine, QUEBEC. St. Lawrence Seaway Auth., No. 2 Temporary Bldg., Ottawa, Ont. Bids Aug. 14. CD 7/25.

▲ **Argo Constr. Ltd.**, 18 Gladstone Ave., Montreal, Que. CA $1,149,000, conveyor galleries, at Elevator "B", Montreal Harbour, Laurier Pier, MONTREAL, QUE. National Harbors Bd., Parliament Bldgs., Ottawa, Ont. Bids July 19. CD 7/24.

BUILDINGS—LB & CA

Bonnington Investments, Ltd., 229 Yonge St., Toronto, Ont. Owner Builds. $420,000. 84-suite, 13 story, brick APARTMENT, Wellesley St. E., near Rose Ave., TORONTO, ONT. Bregman & Hamann, 7 Adelaide St. E., Toronto, Ont., archts.

J. L. Guay & Frere, Ltd., 6900 Cote de Neiges Rd., Montreal, Que., CA $693,473 CITY HALL, ST. LAURENT, QUE., City, 1390 De l'Eglise St., Montreal, Que. Bids July 13, awarded Aug. 7. CD 7/25, under LB.

ALASKA

HEAVY CONSTRUCTION—LB & CA

▲† **Morrison-Knudsen Co., Inc.**, 319 Broadway, Boise, Idaho, LB $1,702,652, est. $1,784,783 (5 bidders) paving two aprons, Inv. 57-8, Ladd Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Aug. 14.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲† **Dragados**, Madrid, Spain, CA $1,430,000. WS facilities, BEN-2, ATLANTIC, SPAIN. Bureau Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash. 25, D. C. Bids July 24. CD 7/19.

▲† Hidro Seville-Management Corp., Madrid—Spain, CA $4,000,000. Group C facilities, MOR 19, MORON, SPAIN. Bureau Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N. W., Wash. 25, D. C. Bids July 24. CD 7/19.

▲† Constructora International, Madrid, Spain, CA $1,090,000. W4 facilities, ROS-1, ROSAS PROVINCE, SPAIN. Bureau Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N. W. Wash., 25, D. C. Bids June 27.

▲† Entracanales-Luria, Madrid, Spain, CA $1,240,000. Group E. facilities, ROT-33, ROTA, SPAIN. Bureau Yards & Docks, Navy Dpt., 18 St. and Constitution Ave. N.W., Wash. 25, D. C. Bids July 31. CD 7/19.

PROPOSED PROJECTS

WATER SUPPLY

▲ Calif., Carlsbad—Carlsbad Municipal Water Dist., $1,350,000 bond election Oct. 2, pipelines.

▲ Calif., Colton—City, City Hall, $1,250,000 bond election Sept. 18, water system impry.

▲ Calif., Eureka—Humboldt Bay Municipal Water Dist., Eureka, $12,000,000 bond election Sept. 25, Mad River Dam at Ruth and diversion dam near Arcata and pipe line to deliver water.

▲ Tex., Midland—City, City Hall, water supply, $1,000,000. Freese & Nichols, 407 Danciger Bldg., Ft. Worth, consult. engrs. CD 7/24/52.

▲ Tex., Odessa—City, City Hall, plans by Parkhill, Smith & Cooper, 201 Ave. R, Lubbock, 16,500,000 max. gal. daily capacity water filtration plant, $1,200,000.; water pumping unit, $60,000; water lines, $75,000. CD 7/30.

SEWERS, WASTE DISPOSAL

▲ Calif., Los Angeles—Los Angeles County Flood Control Dist., 2250 Alcazar St., (Proj. 130) storm drain pump dist. No. 7, Long Beach Co. $1,331,600. Charles P. Morgan & Assoc., 320 Pine Aves, Long Beach, consult. engrs.

▲ Calif., Walnut Creek—Central Contra Costa Sanitary Dist., 1822 Mt. Diablo Blvd., Walnut Creek, voted $8,900,000 bonds Aug. 7, 10-year construction program incl. sanitary sewers and treatment plant expansion. Work to start next year. CD 3/22.

▲ Ill., Chicago—City, City Hall, 1 story concrete incinerator plant, 106 St. and Doty Ave., near Lake Calumet, $3,500,000. CD 11/6/53.

▲ Ind., Logansport—City, Ralph Ebert, mayor, sewage disposal plant, $1,000,000. CD 12/19/45.

▲ Mich., Garden City—City, Douglas F. Waddell, city clk., storm and sanitary sewers, $2,750,000. Pate & Hirn, 532 Michigan Bldg., Detroit, Zone 26, consult. engrs. CD 8/14.

▲ O., Cincinnati—Hamilton Co. and Cities of Cincinnati, St. Bernard, Norwood, Court House, St. Bernard to vote $565,000 bond election November 6, Ross Run trunk sewer. Total est. $3,700,000. Al LeFeber & Assoc., 2933 Woodburn Ave., Cincinnati, consult. engrs. C. A. Harrell, city engr. for Cincinnati; C. L. Hutchinson, engr. for Hamilton Co.; A. C. Schildmeyer, engr. for St. Bernard; Ray Achten, engr. for Norwood. CD 10/16/52.

BRIDGES

▲ Mass., Boston—City, Dpt. P. Wks., City Hall Annex, draw bridge over Fort Point Channel, $2,000,000; Belle Island Bridge, East Boston-Winthrop, $175,000. Will go ahead in 1957.

▲ NEBRASKA—State Dpt. Roads and Irrigation, Lincoln, and City of Lincoln, City Hall.
Lancaster Co.—10th St. viaduct, $6,000,000. Would be part of interstate highway. L. N. Ress, c/o owner, state engr.

▲ QUEBEC—Provincial P. Wks. Dpt., Parliament Bldgs., Quebec City.
Drummondville—bridge over St. Francoise River on Trans-Canada Hy., Rte. and Blvd. Bernard, $3,000,000. Oliver Desjardins, ch. bridge engr. CD 6/9/54.

STREETS AND ROADS

▲ Calif., Alameda—City, City Hall, Lincoln Ave., and Patton and Tilden Ways imprvs., $1,035,000. CD 2/23/45.

▲ Calif., Walnut Creek—City, City Hall, various street imprvs., $2,000,000. Lawrence Melnis, city engr.

▲ CONNECTICUT—State Hy. Dpt., 165 Capitol Ave., Hartford.
Fairfield Co.—relocation Rte. US 6 from Lake Ave. to east of Railroad crossing, Danbury, $3,000,000. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York, N. Y., consult. engrs.
relocation Rte. US 6 from New York State line to Lake Ave., Danbury, $3,000,000. Wm. H. McFarland, 330 Front St., Binghamton, N. Y., consult. engr.
relocation Rte. US 6 from point east of Railroad crossing in Danbury to point 21,700 ft. east of Rte. 25 in Newtown, Bethel, Danbury and Newtown, $2,500,000. Capitol Engrg. Corp., Dillsburg, Pa., consult. engrs.
relocation US 6 from easterly terminus of Sect. 9 to point ½ mi. west of Rte. 202, Newtown, $1,500,000. Robert W. Lowry, 227 Penn St., Harrisburg, Pa., consult. engr. CD 7/6.

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston.
Boston Inner Belt Rte. from Southampton St. sect. circling city thru Roxbury, Cambridge and Somerville connecting with central Artery vicinity of Charlestown, $125,000,000. Coverdale & Colpitts, 120 Wall St., New York, N. Y., engrs. CD 3/14/55.
Expressway Rte. No. 28 Boston to New Hampshire State Line changing Rte. 28 from Wellington Bridge Medford, $36,000,000.
Springfield Expressway from Rte. 5 southern sect. to jct. with Interstate Rte. northeast sect. Springfield, $20,000,000.
Worcester Expressway from Jct. Rte. No. 20 south of Worcester to a point east of city, $40,000,000.

EARTHWORK, WATERWAYS

▲ Calif., San Jose—Santa Clara County Flood Control Dist., 60 N. 2 St., $13,556,000 bond election Oct. 2, new creek channels and imprv. old ones to aid runoff. CD 4/6/54.

▲ Pennsylvania—State Dpt. Forests & Waters, Education Bldg., Harrisburg, flood protection works, incl. impry. existing levees and walls on Little Juniata River, concrete channel for Bald Eagle Creek, Tyrone, Blair Co. $1,500,000. CD 12/1/55.

▲ Pennsylvania—State Dpt. Forest & Waters, Education Bldg., Harrisburg, earth fill flood control dam 60 ft. high, 1,050 ft. long at crest, on Standing Stone Creek, Huntingdon, Huntingdon Co., $1,600,000; earth fill flood control dam, 94 ft. high, 920 ft. long at crest, on Aughwick Creek, Orbisonia, Huntingdon Co., $2,000,000; earth fill flood control dam, 60 ft. high crest length 1,000 ft. on Shaver Creek, Petersburg, Huntingdon Co., $1,400,000; concrete gravity flood control dam, 120 ft. high, 820 ft. long at crest on Blacklog Creek, Orbisonia, Huntingdon Co., $2,300,000; earth fill flood control dam 110 ft. high, 2,350 ft. long at crest on Spruce Creek, Spruce Creek, Huntingdon Co., $2,500,000; earth fill flood control dam, 46 ft. high, 700 ft. long at crest on Trough Creek, Cassville, Huntingdon Co., $700,000; earth fill flood control dam, 110 ft. high, 1,480 ft. long at crest, on Kishacoquillas Creek, Reedsville, Mifflin Co., $3,500,000; earth fill flood control dam 60 ft. high, 1,180 ft. long at crest on Honey Creek, Reedsville, Mifflin Co., $1,400,000. B. D. Murphy, ch. engr. CD 7/13/48.

▲ Alaska, Ketchikan—HOUSING—Alaska Housing Authority, Juneau, clearing and preparing 74-acre housing project for redevelopment, $1,316,284.

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LATIN AMERICA

▲ **Mexico, Irapuato**—PLANT—Montrose Chemical Corp. of Calif., 20201 N. Normandie St., Torrance, Los Angeles, Calif. plans chemical plant, $4,000,000.

▲ **Mexico, Matamoros**—SEAPORT—Dpt. Pub. Wks. & Transportation, Capitol Bldg., Mexico City, major seaport, $5,000,000.

▲ **Mexico, Queretaro**—FACTORY—LaPurina, Queretaro, plans animal foods and concentrates factory, $10,-000,000.

PUBLIC BUILDINGS

▲ **Calif., Alhambra**—SCHOOLS—Alhambra City School Dist., 601 N. Garfield Ave., bond election February 5, 1957, $4,000,000-$5,000,000, elementary schools, high schools.

▲ **Calif., Del Paso Heights**—SCHOOLS—Grant Union High School Dist., Grand Ave., $2,550,000 bond election Oct. 4, schools.

▲ **Calif., Glendora**—SCHOOL—Citrus Union High School Dist., 18824 E. Foothill Blvd., Azusa, plans by Neptune & Thomas, 1560 W. Colorado St., Pasadena, 105,000 sq. ft. high school, Foothill Blvd. and Valley Center Blvd., $1,500,000. CD 2/17/54

▲ **Calif., Norwalk**—SCHOOL—Excelsior Union High School Dist., 17923 S. Pioneer Blvd., plans by Kistner, Wright & Wright, 1125 W. 6 St., Los Angeles, Norwalk High School, $2,000,000.

▲ **Calif., Palo Alto**—HOSPITAL—City, City Hall, plans by Edward B. Stone, 635 Bryant St., hospital, $4,000,000. Hall, Pregnoff & Matheu, 251 Kearny St., San Francisco, consult. engrs. CD 6/2/55.

▲ **Calif., Santa Ana**—CIVIC CENTER—Orange Co., Court House, plans by Wildman & Faulkner, Spurgeon Bldg., next unit of civic center, 8 and Broadway, $1,770,315.

▲ **Fla., Orlando**—CITY HALL—City, City Hall, plans by Richard Boone Rogers, 14 E. Church St., 7 story city hall, corner W. South St. & S. Orange Ave., $1,000,-000. CD 8/24/51.

▲† **Idaho, Arco**—REACTOR—Atomic Energy Comn., Arco, Argonne low power reactor at National Reactor Testing Station, $1,225,000. Pioneer Service & Engineering Co., 80 E. Jackson Ave., Chicago, Ill., consult. engr. CD 3/24/49.

▲ **Ill., Carbondale**—SCHOOL—Community High School Dist., N. A. Rosan, supt., $1,210,000 bond election Oct. 6, high school, $1,210,000.

▲ **Iowa Des Moines**—SCHOOLS—Bd. Educ., 629 3 St., plans by Wetherell & Harrison, 506 Shops Bldg., Woodlawn School addn. $435,000; Kurtz junior high school, $1,490,000; Garton elementary school, $536,000. CD 12/8/55.

▲ **Minn., Detroit Lakes**—SCHOOL—Bd. Educ., G. Johnson, supt. schools, plans by Traynor & Hermanson, St. Cloud, senior high school, $1,000,000. CD 3/28.

▲ **Mo., Hannibal**—SCHOOLS—Hannibal Public Schools, Bd. Educ., E. T. Miller, Supt. Schools, plans by Wm. B. Ittner, Inc., archt. engr., 408 Bd. Educ. bldg. 911 Locust St., St. Louis, school expansion program including junior high school, vocational bldg. and elementary school bldg., $1,800,000.

▲ **Neb., Lincoln**—SCHOOL—Bd. of Educ., plans by S. A. Solheim & Assoc., 324 Sharp Bldg., Charles G. Dawes junior high school, $1,250,000.

▲ **O., Akron**—SCHOOLS—Bd. Educ., 70 W. Broadway, $1,300,000 bond election November 6, Spicer School for junior high classes addn.; Jennings Junior High School wing addn.; multi-purpose room at Henry School, multi-purpose room at Fraunfelter School. $1,230,000. CD 11/16/50.

▲ **O., Brookfield**—SCHOOL—Bd. Educ., Brookfield Twp. School Dist., bond election Nov. 6, Curtis School addn. $1,030,000.

▲ **O., Cincinnati**—HOUSING—Cincinnati Metropolitan Housing Auth., 595 Armory St., plans by Potter, Tyler, Martin & Roth, 128 E. Sixth St., four 13-story bldgs. incl. 108 units, Linn St. near Poplar St. and Freeman Ave., $4,250,000; plans by Sam, Hannaford & Sons, Dixie Terrace, 76 row type houses, Lincoln Heights, $622,000; Larson, McKinney & Miller, 830 Main St., Cincinnati, consult. engrs. CD 1/6/50.

▲ **O., Cincinnati**—GARAGES—City, City Hall, plans by A. M. Kinney, Inc., 2905 Bernon Pl., archt.-engr., parking garage at Govt. Square, $4,000,000. Bids not set; plans by Pepinsky, Grau & Schrand, Union Trust Bldg., 4 deck, concrete parking garage, 6th and Elm Sts., $1,400,000. DeLeuw, Cather & Co., 150 N. LaSalle St., Chicago, Ill., consult. engrs. Bids early 1957.

▲ **Pa., Danville**—SCHOOL—Danville Area Joint School Bd., Danville, plans by Lawrie & Green, 321 N. Front St., Harrisburg, junior high school, $2,000,000.

▲ **Pa., West Chester**—COUNTY PRISON—Chester Co. Comrs., West Chester, plans by Baader, Young & Schultze, 1500 Walnut St., Phila., county prison, Pocopson Twp. $2,757,188. Chester I. Duncan, 225 S. 15 St., Phila., engr. CD 10/14/54.

▲ **Pa., York**—COURTHOUSE—York Co. Comrs., Courthouse, plans by Forrer-Baer Assoc., 48 South Duke St., York County Courthouse, alterations and addns. $1,500,000.

▲ **S. D., Rapid City**—SCHOOLS—Bd. of Educ., plans by Perkins & Will, 309 W. Jackson St., Chicago, Ill., South junior high school, $1,250,000; North junior high school, $840,000. CD 12/8/55.

▲ **Wash., Seattle**—SCHOOLS—School Dist. No. 1, 815 4 Ave. N., Ballard, Franklin and Lincoln High School addns. $1,000,000 each; 3 junior high schools at Olympic Golf Course in southeast Seattle and at Bitter Lake, $2,500,000 each; Woodrow Wilson Junior High School addn., $750,000; Roxhill Elementary School, $700,000; 5 elementary schools at Rainier View, Sand Point, Victor Heights, Schmitz Park and Cedar Park, $625,000 each; 2 elementary schools at West Broadview and North View Ridge, $600,000 each; Harrison, Pinehurst, Arbor Heights and Whitworth Schools addns., $400,000 each. Work may start next year. CD 3/15/54.

▲ **Wash., Spokane**—SCHOOLS—Spokane Schl. Dist., W. 503 4th St., 3 junior high schools, $3,000,000 each.

▲ **Wyo., Rawlins**—HIGH SCHOOL—Rawlins High School Dist., Rawlins, $1,200,000 bond election Oct. 6, high school.

▲ **Man., Winnipeg**—OFFICE—Winnipeg Hydro-Electric System, Winnipeg, office at Notre Dame and Weston Sts., $1,200,000. CD 9/15/44.

COMMERCIAL BUILDINGS

▲ **Calif., Palo Alto**—MEDICAL CENTER—Bd. Trustees, Stanford University, plans by Edward B. Stone, 635 Bryant St., medical center, teaching hospital, medical science bldg., outpatient bldg., classroom, library, etc., $6,500,000. Hall, Pregnoff & Matheu, 251 Kearney St., San Francisco, consult. engrs. CD 6/2/55.

▲ **Calif., San Francisco**—HEADQUARTERS—Southern Pacific Co., 65 Market St., 10-story headquarters bldg., $2,000,000.

▲ **Conn., Hartford**—APARTMENT—Cheri Ann Towers c/o Aron Dubitsky, 18 Pontiac Rd., West Hartford, 10 story apartment bldg. between 381 & 401 Farmington Ave., $1,700,000.

▲ **Conn., Manchester**—HOUSING—K. & S. Contrg. Co., Inc., 1007 Farmington Ave., West Hartford, 81 houses, Hackmatack St., Tumblebrook Acres, $1,296,-000.

▲ **Conn., Southington**—HOUSE—Reed Const. Co., 152 Tallott Rd., West Hartford, 98 house development, Timberlea, Southington-Meriden Rd., $1,176,000.

▲ **Conn., Wethersfield**—APARTMENT—Merritt-Baldwin Const. Co., Wethersfield, garden apartment proj., Belcher Rd. $1,200,000.

Fla., Melbourne—SHOPPING CENTER—Cutri Enterprises, plans by Boardman, Ewart, & Meehan, 2014 Arcadia Pl., Jacksonville, 100,000 sq. ft. shopping center, 630-car parking area, Trade Winds Subdivision, 2 miles north of here. $500,000.

▲ **Fla., Orlando**—RESIDENCES—R. D. Newman, 1460 Kingston St., Augusta, Ga., plans by Hugo R. Brüeman, Jr., 1216 E. Colonial Dr., 138 residences off Fairvilla Rd., Fairlawn Manor Sub-division. $1,000,-000.

▲ **Ill., Arlington Heights**—HOSPITAL—Northwest Community Hospital Center, P. O. Box 75, Palatine, 100-bed brick, steel, conc. hospital, Central Ave., $1,-800,000.

▲ **Ill., LaSalle**—SHOPPING CENTER—Midway Plaza Shopping Center, 2217 8th St., Peru, plans by George L. Bollenbacker, 36 S. State St., Chicago, 1 story tsmnt. brick shopping center, State Rte. 51, north of here. $2,000,000.

▲ **Ind., Indianapolis**—OFFICE—American United Life Insurance Co., 30 W. Fall Creek Parkway N. Dr., Zone 8, plans by McGuire & Shook, 1400 Fletcher Tr. Bldg., Zone 4, 5 story steel, concrete, and buff brick facing office wing, plus 200-car parking facility, $2,500,000. CD 6/10/52.

▲ **Me., Augusta**—SHOPPING CENTER—Howard Millet, Winthrop, plans by Ralph Lee Rankin, Pinecrest Ave., Pembroke, 1,000 ft. store front, shopping center, $1,500,000.

▲ **Md., Baltimore**—HOSPITAL—Mercy Hospital, Calvert and Saratoga Sts., Zone 2, plans by Taylor & Fisher, 110 Hamilton St., Zone 1, brick, steel, concrete hospital, St. Paul Place from Saratoga to Pleasant Sts., $4,000,000.

▲ **Neb., Lincoln**—OFFICE BLDG.—Bankers Life Insurance Co., 1345 N. St., plans by Unthank & Unthank, 526 Sharp Bldg., Lincoln and Shreve, Lamb & Harmon, 11 E. 44th St., New York, N. Y., home office bldg., $1,300,000. CD 5/19/55.

▲ **N. Y., New Rochelle**—SHOPPING CENTER—New Rochelle Development Corp., c/o Boak & Raad, 175 Fifth Ave., New York, shopping center, railroad station, hotel, and parking garage, $17,000,000. Greenhut & Taffel, 2 Columbus Circle, New York, consult. engrs.

▲ **N. Y., New York**—HOUSING—Godfrey Nurse Houses, Inc., 1775 Broadway, Zone 19, plans by S. J. Kessler & Sons, 551 Fifth Ave., Zone 17, Lenox Terrace Housing Proj. incl. six 16 story bldgs., 1,716 units on 3 blocks, between Save Lenox Ave., W. 132 St. and W. 135 St., Title 1, $20,000,000. To go ahead late in 1956 or early 1957. CD 7/14/53.

▲ **N. Y., New York**—OFFICE—Union Theological Seminary, Broadway and 120 St., plans by Collens, Willis & Beckonert, 20 Newbury St., Boston, Mass., 100,000 sq. ft. office, Broadway and 120 St., $2,000,000. Constr. in 1957.

▲ **O., Cincinnati**—HOSPITAL—Christ Hospital, Auburn Ave. plans by Hake & Hake, 2400 Gilbert Ave., 10 story, bsmnt., brick, steel hospital wing addn., $4,000,000. Hixson Tarter & Assoc., 2306 Victory Pkwy., structural engrs. Fosdick & Hilmer, Union Trust Bldg., Cincinnati, consult. engrs. CD 5/25/54.

▲ **O., Cincinnati**—HOMES—Highland Constr. Co., Inc., 6914 Miami Rd., Mariemont, 325 one story brick veneer homes on Hopper Hills Rd. near Rt. 125, $6,000,000. W. A. Kemp Co., 2259 Beechmont St., Cincinnati, consult. engr. Bids in September.

▲ **O., Cincinnati**—SHOPPING CENTER—Shopping Centers, Inc., c/o P. Palazzolo, 2045 Gilbert Ave., plans by Frankenberger-Juniker & Lensky, 2910 Woodburn Ave., archt.-engr., revised plans, shopping center, 2-level bldg., 263,400 sq. ft., 2,500-car parking, 42 stores, Paxton Rd., $5,000,000. CD 8/22/55.

▲ **O., Middletown**—HOMES—Western Ohio Development Co., William Kuntz, pres., 4800 Air Way Rd., Dayton, 54 homes, Highview Sub-division, $1,500,000.

▲ **Pa., Essington**—OFFICE, etc.—Scott Paper Co., Front St., Chester, office and administrative bldg. $4,500,-000.

▲ **Pa., Pittsburgh**—HOTEL—Hilton Hotels Corp., 401 Seventh Ave., New York, N. Y., plans by William B. Tabler, 401 Seventh Ave., New York, N. Y., 17 story Pittsburgh Hilton Hotel, at Gateway Center. $15,-000,000.

▲ **Tenn., Memphis**—APARTMENT—Rubloff & Co., Builders, 100 W. Monroe St., Chicago, Ill., apartment, $1,500,000.

▲ **Tex., San Antonio**—OFFICE-BANK, etc.—Joe Rainey Manion & Co., 403 E. Travis St., plans by Atlee B. & Robert M. Ayers, 342 W. Woodlawn St., office-bank bldg., $2,750,000; multi-story parking garage, $375,-000, 301 Broadway. W. E. Simpson Co., 945 Milam Bldg., consult. engr.

▲ **Va., Alexandria**—HOSPITAL—Alexandria Hospital, 709 Duke St., plans by Joseph Aunders, 121 S. Columbus St., 300-bed hospital on Seminary Rd. $5,000,000. CD 4/17/53.

▲ **Wash., Puyallup**—SHOPPING CENTER—W. K. Fanning, Puyallup, shopping center, west of Meridian and north of River Rd., $2,000,000.

▲ **Alta., Calgary**—SHOPPING CENTER—Principal Investments Ltd., 233 Richmond St. W., Toronto, Ont., shopping center incl. 40 stores and department store, 17-acre site, North Hill Distr. $3,000,000. Work starts in fall.

INDUSTRIAL BUILDINGS

▲ **Calif., Oakland**—WAREHOUSE, etc.—Montgomery Ward & Co., Constr. Dpt., 618 West Chicago St., Chicago, Ill., 2 story warehouse, 3 story paint factory, $3,500,000.

▲ **Calif., Puente**—FACTORY—Carrier Corp., Carrier Bldg., Syracuse 1, N. Y., plans by A. C. Martin & Assoc., 333 S. Beaudry St., Los Angeles, 500,000 sq. ft. factory and office. $6,000,000. CD 5/3.

▲ **Conn., Middlebury**—FACTORY—L. E. Stemmler Co., 25 Jefferson St., Waterbury, 100,000 sq. ft. archery and tackle equipment mfg. factory. $1,000,000.

▲ **Mass., Boston**—GARAGE—United Shoe Machinery Corp., 140 Federal St., plans by Leland, Larsen, Bradley & Hibbard, 711 Boylston St. 10-story 500 cars, garage, $1,000,000.

▲ **Mich., Port Huron**—PLANT—Huron Portland Cement Co., 1325 Ford Bldg., Detroit, cement storage and distribution plant, $1,000,000.

▲ **Minn., Bloomington (P.O. Minneapolis)**—PLANT—W. H. Ziegler Co., O. H. Strand, pres., 2929 University Ave. S.E., plans by Abbett-Griswold, 1409 Willow St., Minneapolis, plant and offices on tract in Bloomington bordered by Hy. 65, Aldrich Ave. S., 94 St. and 96 St., $1,200,000.

▲ **N. Y., Niagara Falls**—LABORATORY—Bell Aircraft Corp., Niagara Falls Blvd., research laboratory, 90 acre site near its Wheatfield plant. $2,000,000.

▲ **O., Bedford**—PLANT—Kennecott Copper Co. of New York, 161 E. 42 St., New York 17, N. Y., test plant to produce metal zirconium. $2,000,000. Horizons, Inc., 2905 E. 79 St., Cleveland, O., is consultant on design, erection and operation.

▲ **O., Canton**—PLANT—Republic Steel Corp., Republic Bldg., Cleveland, expand titanium facilities, approx. 100,000 sq. ft. addnl. building space at South Division plant. Est. $4,000,000.

▲ **O., Massillon**—PLANT—Republic Steel Corp., Republic Bldg., Cleveland, expand titanium facilities incl. 12 vacuum double melt consumable electrode melting furnaces. $4,000,000.

▲ **O., Maumee**—GRAIN ELEVATOR—Owner c/o Porter W. McDonnell, Colton Bldg., Toledo, grain elevator in Monclova Twp. $2,000,000-$3,000,000.

▲ **Tennessee**—PULP-PAPER MILL—Tennessee River Pulp & Paper Co., 230 Park Ave., New York, N. Y., Kraft pulp and paper mill with 200,000 tons capacity of liner-board and corrugated medium yearly for production the second half of 1958, $50,000,000-$70,000,000. J. E. Sirrine & Co., 215 S. Main St., Greenville, S. C. consult. engrs. Site not decided.

▲ **Tenn., Murfreesboro**—PLANT—General Electric Co., River Rd., Schenectady N. Y., 135,000 sq. ft. electric motor plant. $2,000,000.

▲ **Utah, North Salt Lake City**—PLANT—Salt Lake Refining Co., P. N. Johnson, pres., 2351 N. 10 W. St., Salt Lake City, platinum reforming plant. $2,-000,000. Bids this month.

UNCLASSIFIED

▲ **Mo., St. Louis**—DOCK, ETC.—City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, 12 Blvd. and Market Sts., Zone 2, 800 ft. dock, wharves and warehouses, on Mississippi River adjacent to foot of North Market Sts., $2,500,000. William C. E. Becker, 312 N. 7 St., St. Louis, Zone 1, consult. engr. A. L. Munson Assoc., 4967 Washington Blvd., Zone 8, mech. engr. CD 6/2/55.

▲ **Tex., Corpus Christi**—DRY DOCK—Nueces County Navigation Dist. Comm., Waterfront Wharf, bond election Aug. 25, dry dock, $1,600,000. CD 2/16/55.

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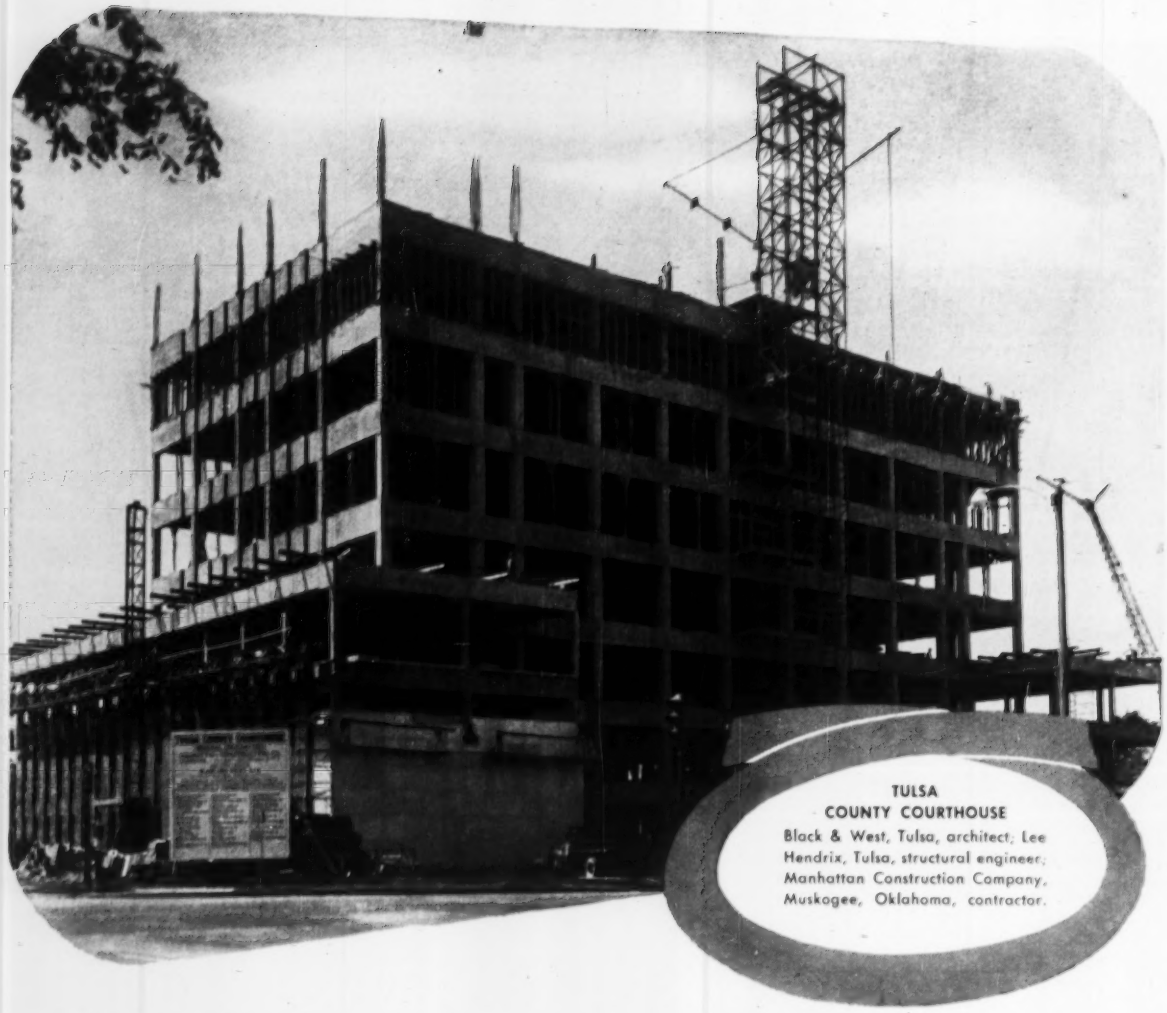

TULSA
COUNTY COURTHOUSE
Black & West, Tulsa, architect; Lee Hendrix, Tulsa, structural engineer; Manhattan Construction Company, Muskogee, Oklahoma, contractor.

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

September 4 Connecticut

STREETS AND ROADS

September 4 Connecticut — September 5 Massachusetts

BUILDINGS—LB & CA

▲ **D'Addario Constr. Co.**, 513 Boston Ave., Bridgeport, Conn., CA, $2,000,000. 1 story, 300,000 sq. ft. FACTORY, Newtown Rd., Beaver Brook, DANBURY, CONN. Eagle Pencil Co., 703 E. 13 St., New York, N. Y. Awarded Aug. 16. CD 7/18.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

September 11 New Jersey — September 14 Pennsylvania

STREETS AND ROADS

September 4 Maryland — September 11 New Jersey
September 13 New York — September 14 Pennsylvania

BUILDINGS—LB & CA

▲ **Baton Constr. Corp.**, 1717 Sansom St., Phila. 3, Pa., CA. Total est. $8,000,000. 1 story 483x763 ft. masonry MFG. PLANT, DELAIR, N. J. Ford Motor Co., American Rd., Dearborn, Mich. Bids July 19. CD 7/9.

▲ **Jersey Development Co.**, Roger Smith Hotel, 16 Livingston St., New Brunswick, N. J. Owner Builds. $40,000,000. 2,000 HOMES to be known as Metropolitan Park on 750-acre tract, FRANKLIN TWP., N. J. Malcolm C. Dady, Roger Smith Hotel, 16 Livingston Ave., New Brunswick, N. J., archt.

▲ **Louis Delotto**, 9 Doremus Pl., Clifton, N. J. Owner Builds, $25,000,000. 1,527 HOMES, 480-acre tract on Rte. 206 in Bartley, Flanders area of MOUNT OLIVE Twp., N. J. Conger Eng. Co., field office, Rte. 206, Flanders, N. J., engr.

▲ **Koppers Co., Inc.**, Koppers Bldg., Pittsburgh 19, Pa. CA Est. $3,000,000. light oil PURIFICATION PLANT, CLAIRTON, PA. United State Steel Corp., 71 Broadway, New York, N. Y.

▲ **Hughes-Foulkrod Co.**, 1505 Race St., Phila., Pa. CA Est. $3,000,000. CAR REPAIR SHOP, MEADVILLE, PA. Erie R.R. Co., B. Blowers, ch. engr., Midland Bldg., Cleveland 15, O. Bids Aug. 14. CD 7/26.

▲ **John McShain, Inc.**, 1501 N. Arlington Rd., Arlington, Va., CA $6,735,000, general constr. STATE OFFICE, Broad and Spring Garden Sts., PHILA., PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Grand total $8,343,349. Bids June 20. CD 6/22, under LB.
Power Constr. Co., 3858 Pulaski Ave., Phila., Pa. CA $937,000, electrical (Phila., Pa.).
Haughton Elevator Co., 1725 Fairmount Ave., Phila., Pa., CA $671,349, elevators and dumbwaiter (Phila., Pa.).

▲ **George A. Fuller Co.**, 511 Wood St., Pittsburgh 22, Pa., CA est. $4,500,000. MILK PLANT and OFFICE, PITTSBURGH, PA. Rieck Dairy Co., 1345 Forbes St., Pittsburgh 19, Pa. Awarded Aug. 8. CD 5/25.

SOUTH

HEAVY CONSTRUCTION—BA

▲ **LOUISIANA**—BA 10/25—South Louisiana Turnpike Comn., Donaldsonville,
Donaldsonville—large thruway 68.4 mi. and 25 mi. consisting of bridges and 18 mi. 4-lane trestle across Atchafalaya Basin. Plans deposit $1,000. Wayne Palmer, National Bank of Commerce Bldg., New Orleans, engr. CD 1/16/53.

HEAVY CONSTRUCTION—LB & CA

▲ **Lee Constr. Co.**, 311 W. Worthington Ave., Charlotte, N. C., CA $3,354,378, **Contr. II**, sewage treatment plant, WINSTON SALEM, N. C. City, City Hall, Winston Salem, N. C. Bids July 26. CD 8/10, under LB.

▲† **Pittsburgh-Des Moines Steel Co.**, Neville Island, Pittsburgh, CA $3,600,000. variable geometry diffuser and scavenging scoop for $12,000,000 supersonic wind tunnel at Arnold Engineering & Development Center, TULLAHOMA, TENN. U. S. Eng., P. O. Box 2691, Tullahoma, Tenn. Bids May 22. CD 6/21, under LB.

BUILDINGS—LB & CA

▲ **Michnick-DiMaio**, 1520 K St. N.W., Wash., D. C. Owner Builds. $10,500,000. 700 HOMES, off Rte. 50 near Fairfax Circle, FAIRFAX, VA. Philip Mason, 8605 Cameron St., Silver Spring, Md., archt. CD 1/19/55.

▲ **Williams McWilliams Industries, Inc.**, 833 Howard St., New Orleans, La. CA, $4,000,000. SHIPPING TERMINAL to shift coal phosphates from Mississippi barges to ocean vessels, PORT SULPHUR, LA. West Kentucky Coal Co., 444 S. Main St., Madisonville, Ky. CD 8/21.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

September 5 Michigan — September 11 Indiana

STREETS AND ROADS

September 5 Ohio

BUILDINGS—LB & CA

▲ **American Bridge Div., U. S. Steel Corp.**, Steel St., Youngstown, O. CA $5,000,000. rebuild trestle and STOCK HOUSE at Ohio Works, incl. 4,500 tons structural steel; trestle will carry railroad tracks for moving materials to blast furnaces, YOUNGSTOWN, O. U. S. Steel Corp., L. D. Woodworth, supt., 912 Salt Springs St., Youngstown, O.

▲ **M. J. McGough Co.**, 1954 University Ave., St. Paul, Minn. EB Est. $3,500,000. (6 bidders) RESIDENCE HALL and DINING HALL, SOUTH BEND, IND. University of Notre Dame, c/o Rev. Edmund P. Joyce, C.S.C. exec. vice-pres., Notre Dame, Ind. Bids Aug. 7. CD 7/23, under Ind., Notre Dame.

▲ **Harry A. Thompson, Inc.**, 228 N. La Salle St., Chicago, Ill., CA $3,000,000, 5 and 15 story, bsmt., HOSPITAL addn., CHICAGO, ILL. Wesley Memorial Hospital, 250 E. Superior St., Chicago, Ill. CD 5/25/55.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

September 6 Kansas — September 7 Minnesota
September 11, 12, October 17 Texas

STREETS AND ROADS

September 6 Kansas — September 7 Minnesota
September 11, 12 Texas

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,
Minn.—**Anderson & Sons, Inc.**, 100 N. 7th St., Minneapolis, Minn. LB $461,503. (6 bidders) C. conc. 8.7 mi. between New Prague and Jordan, Scott Co.;
Minn.—**Arrowhead Blacktop Co.**, 14 Ave. W. and Waterfront, Duluth, Minn. LB $122,614. (5 bidders) b. conc. 1.7 mi. between 6th St. E. in Proctor and west jct. TH 61 in Duluth, St. Louis Co.;
Minn.—**Ashbach Constr. Co.**, 1410 W. County-Rd. C, St. Paul, Minn. LB $3,166,926. (4 bidders) grav. base, C. conc. base, paving, plant mixed bit. surf., bridges and traffic signals 6.7 mi. Ramsey Co.;
Minn.—**R. Benson & Son**, Stephen, Minn. LB $411,042. (4 bidders) grav. base, road mixed bit. base 8.7 mi. between 1 mi. north of Strathcona and Greenbush, Roseau Co.;
Minn.—**Berghuis Constr. Co.**, Prinsburg, Minn. LB $277,927. (16 bidders) grav. base, road mixed bit. surf. 6.8 mi. Douglas Co.;
Minn.—**O. H. Blattner & Sons**, Albany, Minn. LB $494,520. (17 bidders) road mixed bit. base, road mixed bit. surf. 8 mi. between 0.5 mi. west of TH 56 and 0.5 mi. north of TH 65, Isanti Co.;
Minn.—**E. W. Coons Co.**, Hibbing, Minn. LB $165,102. (4 bidders) grav. base, plant mixed bit. surf. 2.8 mi. between Carlton and Scanlon, Carlton Co.;
Minn.—**J. W. Craig Co.**, 1814 California St. N. E., Minneapolis, Minn. LB $665,231 (4 bidders) C. conc. base, plant mixed bit. surf. 11.6 mi. between White Bear Lake and Forest Lake, Ramsey and Washington Counties;
Minn.—**Kimmes Constr. Co.**, Hastings, Minn. LB $507,933. (12 bidders) grav. base, plant mixed bit. surf. 7.2 mi. between 0.8 mi. south of Minnesota City and Mankato Ave. in Winona, Winona Co.;
Minn.—**Kleven Constr. Co.**, Benson, Minn. LB $143,575. (6 bidders) C. conc. base, plant mixed bit. surf. 0.8 mi. in Deer River and in Grand Rapids, Itasca Co.;
Minn.—**C. L. Nelson & Co.**, Brainerd, Minn. LB $127,713 (5 bidders) grav. base, plant mixed bit. surf. 9.3 mi. between Blackduck and 0.3 mi. south of T.H. 1, Beltrami Co.;
Minn.—**Sorensen Bros., Inc., & Enebak Constr. Co.**, Albert Lea, Minn. LB $295,445. (4 bidders) grade 9.7 mi. between LeSueur and Montgomery, LeSueur Co. Bids Aug. 17. CD 8/2.

BUILDINGS—LB & CA

▲ **Pole Line Constr. Co.**, Stapleton Bldg., Billings, Mont., CA 70 mi. rural distr. line for 203 mi. 161,000 volt transmission line from Glenrock and Casper, Wyo. to Yellowtail dam site southeast of Billings, Mont. WYOMING and MONTANA. Total CA $4,500,000. Pacific Power & Light Co., Casper, Wyo. CD 7/17, under CA, under Glenrock, Wyo.
Detweiler, Inc., Twin Falls, Idaho, CA 32 mi. rural distr. line and 36 mi. rural distr. line of 203 mi. 161,000 volt transmission line (Wyoming and Montana).

FAR WEST

BUILDINGS—BA

▲ **Calif., Richmond**—WAREHOUSES—Bids Asked—Safeway Stores, 575 Mission St., San Francisco, 2 warehouses at distribution center. $16,000,000. Kaj Tleill, 171 Filbert St., San Francisco, consult. engr. CD 10/7/54.

HEAVY CONSTRUCTION—LB & CA

▲† **E-W Constr. Co.**, 3170 W. 11 St., Eugene, Ore., LB $6,204,770, est. $5,687,185. Wahluke Siphon, Station 0 plus 00 to Station 159 plus 05.13, Wahluke Branch Canal and PE 16.4 wasteway, Station 577 plus 40 to Station 677 plus 26, Columbia Basin Proj., Spec. DC 4620, WASHINGTON, Bureau Reclamation, Dpt. Interior, Ephrata, Wash. Bids Aug. 21. CD 7/12.

▲† **Slate-Hall-Hamilton**, 7805 S.W. 40 Ave., Portland, Ore., CA, $4,074,510, est. $3,945,219. clearing, grading, filling 5.9 mi. railroad grade, three 111 ft. plate girder spans and two 46 ft. steel beam spans on rein.-con., piers, abutments over Charley Creek, 2 rein.-con. log-haul road underpasses for relocation of N.P. Ry. preliminary to constr. of Eagle Gorge Dam on Green River, Kanasket, CIVENG-45-108-56-68, WASHINGTON. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids July 24. CD 7/27, under LB.

▲ **Guy F. Atkinson Co.**, 10 W. Orange Ave., South San Francisco, Calif., LB $8,288,429 (6 bidders) dam on North Clackamas River and plant addn. at Faraday, Clackamas Co., OREGON. Portland General Electric Co., 621 S.W. Alder St., Portland, Ore. Ebasco Services, Inc., 2 Rector St., New York, N. Y. engr. Award awaits state license. CD 9/23.

BUILDINGS—LB & CA

▲ **Fluor Corp. Ltd.**, 2500 South Atlantic Blvd., Los Angeles 22, Calif., CA $3,000,000. design and construct CEMENT PLAN, PACK HOUSE and 2 BULK LOADING STATIONS, ORO GRANDE, CALIF. Riverside Cement Co., 621 S. Hope St., Los Angeles, Calif.

▲ **McNeil Constr. Co.**, 5858 Wilshire Blvd., Los Angeles, Calif., CA $20,000,000. RESEARCH PLANT for Convair-Astronautics intercontinental ballistic missile, SAN DIEGO, CALIF. Convair Div., General Dynamics Corp., 3165 Pacific Hy., San Diego, Calif. CD 5/4.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

September 5 Yukon Territory

STREETS AND ROADS

September 12 Ontario

HEAVY CONSTRUCTION—LB & CA

▲ **ALBERTA**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., **W. C. Wells Constr. Co. Ltd.**, 140 Ave. F. North, Saskatoon, Sask., LB $2,178,532. base course and bit. prime coat Mile 31-43.3, Trans-Canada Hy., Banff-National Park. CD 12/1/43.

LATIN AMERICA

HEAVY CONSTRUCTION—LB & CA

▲ **Pemex Co.**, Mexico City, Mexico. Own Forces. $3,450,000. 105 mi. 22 in. natural gas line from Reynosa to Monterrey, MEXICO.

▲ **Tecnica Constructora C. A.**, Caracas; **Constructora Nacional de Tuneles y Carreteras C. A.**, Caracas; **Constructora Raymond de Long, C. A.**, Caracas; **Massman Constr. Co.**, 3917 Broadway, Kansas City, Mo., U. S. A. and **Sverdrup & Parcel, Inc.**, 915 Olive St., St. Louis, Mo., U. S. A., LB $44,097,836. (18 bidders) design and construct 5.6 mi. highway, tunnel and railroad bridge at Lake Maracaibo outlet to Caribbean between Piedras and Punta Iguana, VENEZUELA. Ministry of P. Wks., Edif. La Previsor, Caracas, D. F., Venezuela. Bids Aug. 15. CD 7/11.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲ **A. L. Daugherty**, Guaranty Bldg., Indianapolis, Ind., U. S. A., CA Total est. $15,000,000. constr. roads linking Pnom-Penh with new seaport on Gulf of Siam, CAMBODIA. Govt. of Cambodia, Pnom-Penh. CD 2/24.

FOREIGN

HEAVY CONSTRUCTION—BA

Malaya—BA 1126—Dir. P. Wks., Govt. of Federation of Malaya, Kuala Lumpur, steel cantilever double-decked highway bridge over Klang River in town of Klang, Selangor on main road between Kuala Lumpur and Port Swettenham. Plans deposit $350. Tenders will only be accepted from firms having previously executed works of a similar nature and with established facilities for fabricating major steel bridges in their own works and possessing experience in the field of steel bridge constr. and sinking of compressed air caisson foundations.

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phone: Arbutus 2700
New York Office—MU. 7-0926

Traffic, Tight Site, "Tunnels" Add to Highway Costs

The contractor on the $1.75 million section of F. E. Everett Highway for New Hampshire's Department of Public Works and Highways has these costly complications to deal with:

City water supply must be maintained while 66- and 78-in. reinforced concrete pipe "working" tunnels are provided to carry mains under the new highway.

This express route is along the Merrimack River between Manchester and West Manchester, squeezed in between expensive warehouses and Boston & Maine RR spur lines on the west and on the east by a maximum 5% river "encroachment factor".

Two arches under the Notre Dame Bridge must be shared with the B&MRR, but interstate standards must be maintained.

Reuel W. Webb is turnpike construction engineer. Manchester Sand, Gravel & Cement Co., Inc. took the contract on a bid that was 2.6% below the next higher and 6.1% below the engineer's estimate.

This is a 2.013-mile asphaltic concrete roadway with three steel beam bridges, 73, 99 and 104 ft long. It has four lanes and a median strip, 4 to 24 ft wide.

Paving, designed to serve local and through traffic, will be 1-in. type I-1 hot plantmix asphaltic concrete on a 3-in. class C-2 roadmix base and a 24-in. gravel course. Class A concrete must have compressive strengths of 3,000 psi and contain a minimum of 5.8 bags of cement per cu yd.

Minimum wage rates range from $1.35 for unskilled labor, $1.80 to $2.85 for equipment operators, to $3.35 for steel workers.

1C Manchester Sand, Gravel & Cement Co., Inc., Manchester, N. H. $1,753,071
2 Frank Palazzi & Sons, Inc., Johnston, Rhode Island 1,800,933
EE Reuel W. Webb, Turnpike Const. Engr 1,867,048

Bids: 6-14-56 Items	Unit	Quantity	Unit Prices 1C	2
Clear and grubb	ac	19	$400.00	$500.00
Trees, remov., small	ea	2	50.00	40.00
large	ea	6	80.00	90.00
Earth excav, incl borrow	cy	621,000	0.44	0.44
Ledge excav	cy	4,000	2.50	2.00
embankments	cy	18,000	1.25	1.25
Excav, trench, earth	cy	13,200	2.00	2.00
ledge	cy	300	12.00	10.00
struct, unclass, A	cy	3,160	2.75	5.00
B	cy	6,300	1.00	2.00
Subgr & embkmt fndn, roll	hr	400	40.00	50.00
Fine grading	sy	300,000	0.07	0.08
Gravel	cy	60,000	0.70	0.95
bkfl	cy	100	3.00	2.00
overhaul	cym	291,000	no charge	
crushed	cy	37,000	1.50	1.35
Stone seal, crushed for shoulders	t	150	6.00	8.00
Surf treat, asph, cl A	gal	144,000	0.18	0.19
Pave, hot asph conc, 1"	t	5,500	7.50	8.00
Wear crse, asph conc	t	182.9	15.00	18.00
Conc, cl A, Sta 862	cy	4,227	45.50	43.00
app slab, Sta 862	cy	123	32.00	30.00
Conc, cl A, Sta 934	cy	790.6	49.00	48.30
Sta 944	cy	1,051	51.00	48.00
Conc, cl A	cy	42	100.00	70.00
Steel, reinf	lb	733,900	0.145	0.13
struct, Sta 862	lb	260,000	0.16	0.165
Sta 934	lb	94,500	0.165	0.165
Sta 944	lb	119,000	0.165	0.165
Bridge shoes, Sta 862	ls	job	2,500	2,300
Sta 934	ls	job	2,500	2,100
Sta 944	ls	job	3,500	3,000
Mary, mortar rubble	cy	310	40.00	40.00
RCP, std str, 12"	lf	5,880	3.00	3.00
12", 8' long	lf	1,680	3.75	4.00
15"	lf	1,400	3.50	3.50
15", 8' long	lf	200	4.75	4.50
18"	lf	1,180	4.50	4.00
18", 8' long	lf	104	5.75	5.50
24"	lf	1,020	7.00	6.25
24", 8' long	lf	320	8.25	7.25
30"	lf	132	8.50	9.00
30", 8' long	lf	104	10.00	10.50
36"	lf	204	10.50	12.00
48"	lf	104	16.00	20.00
66"	lf	84	34.00	40.00
78"	lf	244	45.00	50.00
extr str, 36"	lf	140	12.00	16.00
48"	lf	148	18.50	24.00
doubl ex st, 18"	lf	364	6.00	6.00
18", 8'	lf	44	7.00	8.00
24", 8'	lf	44	9.50	10.00
CIP, water, cmt lined, cl 150, 8"	lf	500	4.50	8.00
14"	lf	400	8.50	12.00
CMP, bit coat, 12"	lf	160	3.50	3.25
18"	lf	20	5.00	4.50
Piles, bear, conc	lf	19,000	5.50	5.30
loading tests	ea	3	1,500	500.00
driv equip	ls	job	3,000	3,500
Brr railing, Sta 862	lf	1,001.2	15.00	13.20
median	lf	71.7	15.00	14.00
Sta 934	lf	196.9	17.50	13.70
Sta 944	lf	186.8	17.50	13.70
Pipe rebld & railing, pate	ls	job	500.00	1,150
Membrane, waterproof	sy	3,289	2.25	2.10
Riprap	cy	400	22.00	25.00
RCP unddr, 15"	lf	496	3.75	3.75
18"	lf	744	4.50	4.75
24"	lf	744	6.50	7.95
CP, sewer, unddr, 8"	lf	3,000	1.00	2.00
12"	lf	448	2.00	2.50
CP, plain, bit coat, 6"	lf	1,350	2.25	1.75
Curb, granite, C, straight	lf	6,715	2.25	2.25
curved	lf	255	6.00	4.00
D, straight	lf	30,230	2.80	3.00
curved	lf	175	6.50	6.00
bridge, straight	lf	689.2	4.25	4.00
retaining wall	lf	895.3	5.00	4.00
Curb, granite, reconst	lf	75	1.50	1.50
asph conc, type A	lf	3,255	0.80	0.60
type C	lf	2,930	0.80	0.60
Gd rail, multi cable, GR-2C	lf	12,600	2.20	2.30
beam, adj sidewlk	lf	2,200	4.50	2.90
GR-6B	lf	1,400	3.75	3.60
doubl faced	lf	5,000	4.85	6.00
iron pipe, 1½	lf	125	5.60	5.00
Anchorages	ea	65	42.00	40.00
Post markers	ea	90	6.50	7.00
Catch basins, type B	ea	175	160.00	180.00
Manholes	ea	15	200.00	220.00
reconstruct	lf	30	35.00	30.00
Sluice, half-circle, 15"	lf	130	3.00	5.00
Curb inlet, granite, ty B	ea	120	28.00	30.00
Curb board	lf	3,000	0.35	0.35
Conduit, fiber, 3"	lf	5,010	1.00	1.50
conc encased	lf	1,600	2.00	2.70
Sidewalk, asph, 2"	sy	2,800	2.75	2.50
conc, 3"	sy	630	3.25	3.25
Stock wire fence	lf	3,600	0.44	0.45
Officers, uniformed	hr	6,000	2.00	2.00
Project markers, lettering	ea	2	10.00	5.00
Traffic, maintain	lf	10,628	0.20	0.20
Loam, 4" deep	sy	73,300	0.40	0.45
Sod	sy	4,200	2.00	2.00
Fertilizer	lb	22,400	0.10	0.10
Grass seed	lb	930	2.00	2.00
Mulch	sy	57,000	0.06	0.08
Water	unit	7,000	2.00	2.00
Trees, transplant	ea	10	100.00	75.00
Bounds, furn & set	ea	75	15.00	20.00
Check gates, 12"	ea	3	75.00	100.00
Fill, struct, Sta 934	cy	15,000	1.25	2.00
Fence, woven wire, 6"	lf	7,600	2.80	2.90
8'	lf	1,700	3.50	3.50
Recorder box, undergr	unit	2	500.00	500.00
Alternate A				
Pave, rd mix, cl C-2, agg -40	t	15,900	3.00	3.25
Asph cutback for pave	gal	197,000	0.15	0.17
Alternate B				
Pave, rd mix, cl C-2, agg -40	t	14,450		
Bit matl for pave	gal	120,000		

To be completed: 9-1-57

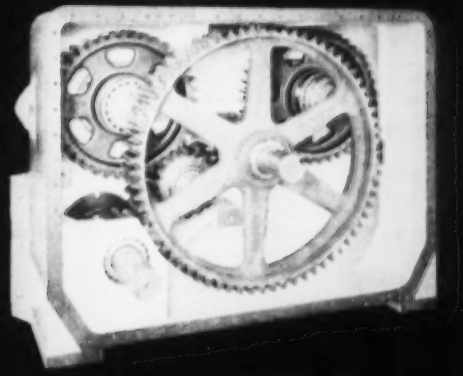
HERE'S JUST ONE REASON WHY THE NEW

MADSEN HOT ROD

MODEL 391 ASPHALT PLANT

...stands out in the industry for fast, efficient and economical performance—the kind that means consistently more production and greater owner profits.

Here is the new MADSEN HOT ROD Model 391 Asphalt Plant in operation. This is a 5000-lb. plant, producing in excess of 200 T.P.H. of quality mix. The HOT ROD Asphalt Plant is available in capacities of 3000-lbs., 4000-lbs. and 5000-lbs.



MIXER DRIVE TOTALLY ENCLOSED—RUNNING IN OIL
Photo shows interior of MADSEN GEAR BOX REDUCTION In-coming power enters through shaft at lower left. The cut-tooth gear assembly, on rugged shafting and anti-friction bearing units, is fully enclosed, runs in oil.

THERE'S NOTHING LIKE IT IN THE INDUSTRY!

For the first time in an asphalt plant . . . a FULLY-ENCLOSED GEAR BOX REDUCTION THAT GOES RIGHT TO THE MIXER SHAFTS! This MADSEN-designed drive accomplishes the huge reduction in speed from the diesel engine or electric motor to the mixer shafts in a simple, free-running, dust-tight manner. It eliminates the exposed mixer timing gears and the pressure injection pump motor.

The gear case receives the in-coming power from a straddle-mounted V-belt driven multiple groove sheave. A simple enclosed chain coupling connects with the in-going side of the gear box. From here on we have the pinion and mating cut tooth bull gear. On the out-going shaft of the latter is another pinion which meshes with the idler gear, and the two mixer timing gears. A power output shaft drives by simple chain through a fully-enclosed clutch to the pressure injection pump. The twin mixer shafts are coupled into out-going stub shafts on the gear box by simple internal-external gear-type couplings. *Simple, practical, economical* . . . this drive is an outstanding contribution to the overall efficiency of the MADSEN HOT ROD Asphalt Plant.

For greater profits in the big road-building years ahead . . . put the outstanding MADSEN HOT ROD to work!

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ASPHALT TANKS • ROYAL CROWN PUMP VALVES • ASPHALT AND FUEL PUMP UNITS

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Sept 6—Cement, Aggregate, Ready-mixed Concrete, Asphalt
- Sept 13—Iron and Steel Products, Pipe
- Sept 20—Wood Products, Glass, Explosives, Chemicals
- Sept 27—Clay Products, Lime, Plaster, Paint, Roofing

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION SCORED Per M. lots of 2,000 pieces or over,			STRUCTURAL CLAY TILE LOAD BEARING SCORED Per M. lots of 2,000 pieces or over,			BRICK Per M. in quantity		LIME Per ton, in paper, Carload lot,		
	3x12x12 in.	4x12x12 in.	8x12x12 in.	8x12x12 in.	10x12x12 in.	12x12x12 in.	Common backing	Straight hard	Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$148.25p	$148.25p	$296.50p	$333.55p			$30.50p	$32.70p	$23.50	$24.50	$
Baltimore	200.00	217.00	406.00	455.50	595.00	681.00	36.00k	41.00k	33.00	22.00	
Birmingham	135.00p	152.00p		303.00p	376.00p	465.00p	27.00ff	38.00gg	33.35	22.30	26.33
Boston	210.60†	224.60†	421.10†	467.80†			40.00p	44.00p	35.70†	30.00†	
Chicago	135.00	145.00	280.00				30.00	32.00	36.00	29.00	
Cincinnati	205.00j	225.00j	296.00jdd	213.00j	288.00j	314.00j	45.00j	46.00j	28.50j	24.25r	28.50j
Cleveland	195.00**	207.00**					40.00	42.00	29.75	26.00	
Dallas		152.00					25.75	45.00	32.00	31.00	
Denver							36.00	47.50	34.80bb	28.00bb	34.00bb
Detroit	213.00	226.00	425.00		620.00	710.00	44.50cc	44.00cc	34.00	30.00	
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	33.00	33.00	32.00	27.50	28.50
Los Angeles	r	r	r	r	r	r	30.50‖		34.00	34.00	38.00
Minneapolis	188.00p	210.00p	429.00p	210.00pw			43.00*p	52.50ii	44.50hhe	35.50hhe	47.50hhda
Montreal	164.00aq	178.00au	325.00au	270.00	288.00		42.00	49.00	39.00	22.00	13.75w
New Orleans	186.00	186.00	380.00	380.00			40.00	55.00	30.60	21.50	31.50
New York	158.10A	168.60A	231.70ck	255.20kn			44.00		37.00	35.00	
Philadelphia	156.30	166.80	312.70	375.20			30/34	34/40	27.60	25.60	3.17
Pittsburgh	164.00	182.00	292.00	340.00	420.00	498.00	36.00	46.00y	32.00	29.50	2.97m
St. Louis	178.50cc	203.00cc	358.00cc	500.00cc	450.00cc	621.50	43.00nf	41.50x	98aaa	80aaa	1.30aaapss
San Francisco	156.85n*	177.10n*	235.30ddn*				39.50*	39.50*	27.75	27.75	30.50
Seattle	225.00cc	250.00cc	450.00cc	250.00ccw			43.00x	55.00x	48.00aAA	38.25AA	3.90mAA
Toronto	138.70	148.90	273.75	222.00f			38.00	63.00	40.00	33.50	31.00

*† F.o.b. yard Roxbury. *a Smooth. *b Per 50 lb. bags. *c 6 x 12 x 12 in.-3 cell. *d Pulverized hot. *e 8% 10th following month. *f 8 x 8 x 12. *g 8½ x 8 x 12. *h F.o.b. trucks, job site N.Y.C. *j Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 180 lb. *n 7¾ x 7¾ x 12. Speed tile. *p Truck lots. *q Provincial and Municipal tax extra. *r Not used because of earthquake danger. *s 2% discount for cash. *t 8½ x 8 x 11¼. *u Tax exempt. *v Sand lime. *w 8 x 8 x 12. *y Stacked. *z Pebble lime price per 80 lb. sack. not sold per ton. *bb LCL. *cc Truck delivery. *dd 8 x 12 x 12. *ee Pebble lime. *ff 80% common. *gg Rough, $40.00 Smooth. *hh Incl. *ii Chi common ‖ F.o.b. yard *** Warehouse delivery. ** F.o.b. plant Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES: Carload lots f.o.b. factory Rolls, slate surfaced, 88-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 380 lb. bbl. per ton
Atlanta	$19.25	$28.275	$3.59	$3.86	$3.31	$3.15	$2.95	$2.95	$0.63	$57.75
Baltimore	19.00	27.90	2.75	4.25	3.35	2.78	4.25	4.25	.48	50.18
Birmingham	19.25	28.275	3.90	3.40	....	3.37	2.90	2.80	.87ff	42.65ee
Boston	19.00	27.90	....	....	....	3.30gg	2.85aq	2.80aq	.45g	54.00g
Chicago	19.00	27.90	....	....	....	3.57‖w	3.00‖e	3.00‖e	.43 80‖bbr	52.70‖
Cincinnati	19.00	27.90	....	....	....	3.15	2.63	2.63	.594y	50.38
Cleveland	19.00	27.90	2.30hhpqq	2.52hhqq	2.67hhqq	3.15q	2.62a	2.62a	.61y	45.00AA
Dallas	19.25	28.65	....	4.05	....	3.50q	3.75a	4.35a	.38	58.50AA
Denver	19.80	28.40	3.29	5.15	3.04	2.84	2.30a	2.30a	.48ff	45.00
Detroit	19.00	27.90	3.35	3.35	3.50	2.656	2.400	2.400	.53	47.30
Kansas City	19.00	28.65	3.64	3.12	2.76	3.65	3.49a	3.49a	.58	83.70
Los Angeles	19.00	28.15	3.30n	4.50n	4.20n	3.20n	2.15en	l	.20my	
Minneapolis	19.00	29.85/28.02	....	....	....	2.95hdd	2.35hhdd	2.35hhdd	.46dd	48.00r
Montreal	....	21.95	5.02Dff	5.94Eff	4.65Fff	5.25f	4.65f	4.65f	1.60	....
New Orleans	....	....	....	....	....	3.15	2.62	2.62	0.756	....
New York	19.00	27.90	....	....	....	2.84G	2.30Gn	2.30Gn	.463Gn	48.00*
Philadelphia	19.00	27.90	3.60	3.40/3.65	3.80/4.60	2.84	2.94	2.94	.37	26.00
Pittsburgh	19.00	27.90	3.10	3.36	3.68	3.72	2.85a	2.85a	.42	58.75
St. Louis	19.00	27.90	....	....	....	2.86r	2.36A	2.36A	.46y	54.33
San Francisco	19.00	28.15	2.95	4.15	3.40	2.70	1.85**	2.84	.56	51.00
Seattle	19.00	28.40	3.30mee	4.02mee	....	3.58mjee	3.11hmee	....	.51mee	47.20mee
Toronto	....	....	....	....	....	4.45	4.10	....	1.70	88.00

*‡ Delivered. * Note: Red lead in oil 50r higher than white lead in oil. *a Red lead prices change frequently due to pig lead price changes. *b U. S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 15 lb. *f Per 432 sq. ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Net carload lot prices; Minneapolis and vicinity. *k Per cwt. *l Not used. *m 1% discount for cash. *n F.o.b. city. *o Per 60-lb. roll. *p 5-drum, 50 gal. ea. *q Per 90-lb. roll. *r F.o.b. factory, Chicago. *s Truckload. *t Federal tax included, add 5%, mun. & prov. tax. *u Per 90-lb. square. *v Per ton. *w Price to large paint contractors is $1.25 less *x Mineral surfaced. *y 55-gallon container. *z Drums. *aa 15 lb., 324 sq ft roll. *bb Roofers coating and cement; Price per ton. *cc LCL, truck delivery. *dd 2% cash discount. *ee Asphalt pitch in 100 lb. package. *ff 5-gal. drums. *gg F.o.b. factory. *hh Incl. freight. *ii per roll *D Std. Black. *E Ready-mixed. *F Over 80% ferric oxide. ** Aver. wt. approx. 425 to 550 lbs. drums. *G fob factory points

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	PLASTER† Gauging per ton	VERMICULITE† Home Insulation pellets per bag of 4 cu ft	VERMICULITE† Plaster aggregate per bag of 4 cu ft	VERMICULITE† Concrete Aggregate Untreated per bag of 4 cu ft	PERLITE Plaster Aggregate per bag of 4 cu ft	PERLITE Concrete Aggregate Untreated per bag of 4 cu ft	ALUMINUM SHEET& Flat, .102" th 36"x96" & 48"x144" per lbr	ALUMINUM SHEET& Corr roof .032" th 35"x12' per sh‖	STAINLESS STEEL SHEET*-TYPE 302‖ 20 ga 48"x96 120" per cwt‖h	STAINLESS STEEL SHEET*-TYPE 302‖ 28 ga 36"x120" per cwt‖mm	COPPER WATER TUBING-TYPE L 2000 ft lots per ft‖ ¾"h	COPPER WATER TUBING-TYPE L 2000 ft lots per ft‖ 1"h
Atlanta	$30.00	$35.00	$1.55x	$1.45x	$1.80ld	$1.40	$1.40	$0.422n	$6.57n	$61.45n	$67.50m	$18.11f	$25.11f
Baltimore	22.85	33.25	0.95	1.15	1.15	1.15	1.65	0.391	0.427r	56.25	61.25	0.1953	0.2715
Birmingham	38.00	43.00	1.55	1.55	1.80f	1.55	1.55	0.475	9.52	62.26	70.76	0.1951	0.2745
Boston	22.00	29.00	1.15-1.20	1.15-1.23	1.45	1.45	1.50	0.505p	28.56ep	59.373dd	65.51ddff	0.1811	0.2541
Chicago	26.80	26.80	1.55	1.60	1.60f	1.50	1.50	0.455n	9.775‖p	62.80ee	70.90ee	0.1811	0.2541
Cincinnati	21.60**	21.60**	1.75	1.75	1.75	1.38	1.44	0.400	8.66	60.65	66.70ff	0.1811	0.2541
Cleveland	28.00	43.00	1.13	1.16	1.24f	1.45	1.45	0.44aa	8.66	62.81	70.91	18.11f	25.41f
Dallas	29.80	31.80	1.20	1.25	1.30f	1.21	1.62	0.379	0.439r	55.00	63.00	0.1949	0.2929
Denver	25.00	25.00	1.45	1.35	1.50	1.40	1.50	0.455	9.23	58.44gg	66.44gg	0.2214	0.3114
Detroit	25.00	25.00	1.28	1.32	1.41	1.54	1.61	0.455	9.235	62.50	71.00	15.225m	28.85f
Kansas City	30.00	35.00	1.20	1.30	1.40	1.35	1.50	0.431	10.32	62.32ee	70.32ee	20.54f	28.85f
Los Angeles	26.20	27.20	1.25ee	1.20ee	1.25ee		1.60	0.46	8.99	61.50	70.07	0.2214	0.3114
Minneapolis	32.00	32.00	1.50	1.60	1.80	1.30	1.30	0.462	8.65	62.87	76.32ff	0.1851	0.2541
Montreal	28.80	33.20	1.10	1.30	1.30	1.15e	1.15e	0.372	8.40	62.75	....	0.264	0.322
New Orleans	32.00	45.00	1.25	1.25	1.35	1.25	1.25	0.422	8.303	57.18	65.18	0.1987	0.2796
New York	24.00	30.00	1.25	1.25	1.30	1.30	1.30	0.445hee	8.98h	58.48	66.48	18.11f	25.41f
Philadelphia	23.25	32.00	1.35	1.35	1.40			28.50hee	7.50h	53.23	60.98f	18.57f	26.01f
Pittsburgh	27.50	31.00	1.30	1.30	1.32	1.35	1.35	0.42	9.19	56.81	62.63	0.2045	0.2572
St. Louis	29.00	40.00	1.30	1.55jj	1.50	1.60	1.45	0.487ee	9.80r	62.83kk	69.08kk	18.11m	25.41m
San Francisco	27.85	32.00	1.15	1.15	1.36	1.10	1.10	0.46	8.45cc	60.96ee	75.47e	0.1811	0.2541
Seattle	38.00	41.00	1.45	1.25k	1.85f	1.40k		0.422	8.303	60.50ee	68.00ee	0.1951	0.2715
Toronto	32.50	42.00	1.20	1.30	1.35			0.412	21.55	62.75	95.00	0.3290pp	0.4136pp

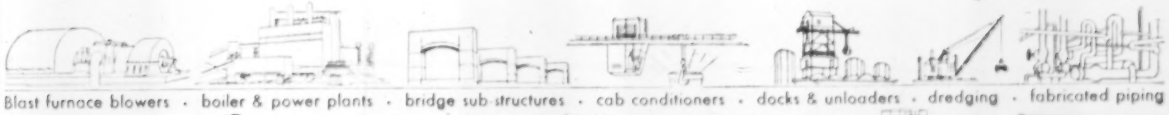
† trucklots, delivered * carload ‡ delivered *a fob city *b ½" O.D. *c ¾" O.D. *d In 1M lb skids *e Previous prices were 5-10M lb bracket *f per 100 ft *g 5 tons & up; cold roll, anneal & pickled; 2B finish *h 15M lb *i 3003 alloy; 1100 alloy $0.456 lb *j 1100 & 3003 alloy, mill finish *k per bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob plant, fr allow *o 5M lb & up *p 100 sq ft quantity *q 2M lb quantity *r per lb *s 30-bag *t 36" x 96; 10.81 lb sh; 48" x 144" 21.7 lb sh *u 19.31 lb sh *v fob plant *w 48" x 144" *x 36" x 96" $13.25 sh *aa 16M lb & up *bb fob mill *cc 26" x 6.12" *dd add $0.75 cwt for boxing *ee 4 tons & up *ff 26 ga *gg add $2 cwt boxing; $0.75 cwt on skids *hh Theoretical wt for 48" x 96"; 50.4-lb. per sh. *ii 300-bag lots *jj per 100-lb bag *mm Theoretical wt: 19.7-lb per sh. *nn Deliv, warehouse means *oo ½" O.D. *pp Incl 10% sales tax

another DRAVO project:
10 MILE TUNNEL UNDER PITTSBURGH

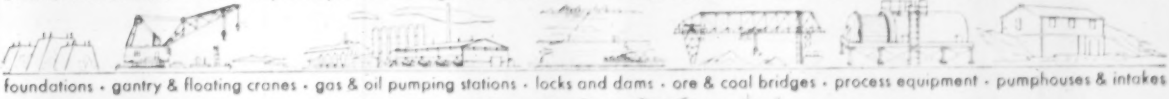
Dravo has started work on a vital part of Allegheny County Sanitary Authority's new $80 million sewage system program. The job: to build a 10 mile long tunnel through rock at an average depth of 100 feet below the city. Called the "main interceptor line," it varies from 4 feet to 10½ feet in diameter. The tunnel will receive sewage through fifty-eight down shafts and carry it to a new sewage treatment plant.

Construction projects in and around water are routine for Dravo. Now underway are piers for a multi-million dollar bridge in New Orleans; a large harbor for ore boats on Lake Superior; docks for industries on the inland rivers. Some of the other products and services Dravo has provided business and industry for more than 60 years are shown below. DRAVO CORPORATION, PITTSBURGH 25, PENNSYLVANIA.

DRAVO
CORPORATION



Blast furnace blowers • boiler & power plants • bridge sub-structures • cab conditioners • docks & unloaders • dredging • fabricated piping



foundations • gantry & floating cranes • gas & oil pumping stations • locks and dams • ore & coal bridges • process equipment • pumphouses & intakes

river sand and gravel • sintering plants • slopes, shafts, tunnels • space heaters • steel grating • towboats, barges, river transportation

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Sept. 6—Cement, Aggregate, Ready-mixed Concrete, Asphalt
- Sept. 13—Iron and Steel Products, Pipe
- Sept. 20—Wood Products, Glass, Explosives, Chemicals
- Sept. 27—Clay Products, Lime, Plaster, Paint, Roofing

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½"	GYPSUM PLASTER BOARD tapered edge per Msq ft ⅝"	GYPSUM BOARD LATH plain or perf per Msq ft ⅜" x 16" x 48"	GYPSUM SHEATHING tongue & groove per Msq ft ½" x 2' x 8'	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" sq ed	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½" T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½"	MINERAL WOOL INSULATION† loose, per 40-lb bag a	MINERAL WOOL INSULATION† 3" batts per M sf a	GLASS FIBER INSULATION† loose, per 40-lb bag a	GLASS FIBER INSULATION† 3" batts per M sf a	ALUMINUM FOIL 80¢ Kraft Expansible 1 side foil per roll of 250 s. f.	ALUMINUM FOIL 80¢ Kraft Expansible Blanket 2 layers foil per Msq. ft
Atlanta	$70.00	$80.00	$43.00	$70.00	$70.00	$127.00	$77.00	$1.00	$60.00	$1.75⅝	$65.00	.....	.....
Baltimore	51.25/	44.75/	32.55/	55.00/	65.00/	108.50/	69.00/	1.30	66.50	1.60	45.00	$4.00g	$33.50
Birmingham	73.00	60.00	47.77	75.00	80.00	134.00	79.00	1.40	70.00	1.60	75.00	2.99g	.....
Boston	57.00m	46.50m	33.00m	52.00m	64.00m	109.00m	79.00kk	1.48	70.00	.....	53.00	6.00	55.50
Chicago	67.00	82.00	43.00	62.00	85.00	123.00	85.00	1.55	80.00	.....	83./65kk	5.25r	.....
Cincinnati	46.40w	41.60w	30.80w	49.81w	67.50w	120.00w	70.00w	1.25	60.00	1.25	73.50	2.94	50.00w
Cleveland	60.50	55.00	40.00	65.00	70.00	111.00	70.00	1.35/1.50	75.00	1.60**	57.50**	17.50*	50/55
Dallas	58.00	55.00	42.50	65.00	73.50	122.50	70.00	1.90	65.00	1.35	65.83	4.25	.....
Denver	62.00	54.50	41.00	62.00	75.90	126.00	74.90	.....	71.00s	1.20*	55.00	11.00r	21.00
Detroit	59.00	53.00	36.00	57.50	58.50	98.00	57.50	.....	.....	1.95§	83.00	.....	.....
Kansas City	55.00	55.00	40.00	65.00	72.00	120.00	75.00	1.40	80.00	1.40	80.00	11.24dt	19.44
Los Angeles	64.00	59.00	0.22Bz	66.50	71.87	121.25	80.00	.....	83.00	1.35a	64.00	4.20g	.....
Minneapolis	80.00	70.00	0.40z	80.00	70.00	140.00	78.00	1.60	80.00	1.80	80.00	6.80	.....
Montreal	56.00	48.00	36/39	53.00	60.00	.....	62.00	1.30	56.00	1.30	56.00	23.00e	56.00
New Orleans	55.00	48.00	45.00	70.00	75.00	125.00	72.50	1.75	68.00**	.....	.....	.....	.....
New York	53.00	45.50	35.00	54.00	69.00	109.00	70.50	1.55	65.00	1.90*	67.00	5.20	48.80ee
Philadelphia	50.00	48.00	34.00	48.50	67.50	105.00	69.20	.....	63./70	.....	70/75	5.50/6.34	50/44.50
Pittsburgh	65.00	55.00	40.00	68.00	65.00	105.00	60.00	1.90	72.00	1.90	72.00	4.10	.....
St. Louis	65.00	55.00	39.00	65.00	70.00	115.00	75.00	1.60	80.00	1.65	82.00	4.75d	.....
San Francisco	52.00z	44.75	0.34z	56.00	59.00	99.00	58.00	1.80	66.50	1.55	66.50	4.95	55.00
Seattle	63.50	57.50	46.50	63.50	72.50	122.00	71.50	1.75y	79.00	1.60aaz	48.00aa	4.25g	46.50
Toronto	61.00	50.00	40.00	64.50	75.00	.....	.....	0.90	51.00	.....	51.00	16.10e	43.65

*a for hand packing *b per 30¢ bag *c carloads *d 40¢ kraft paper *e 20¢ sq ft bag, 4" thick *f full trailer loads *g 80¢ kraft paper backing *h LCL *i flameproof $75.00 *m 10 ton quantities *n distributor's siding *o per Msf roll *p per sf *r per cwt *s per 35¢ bag *t per M sq ft *w fob city *x per sq. yd. *y 26¢ bag *z 32¢ bag *aa fob warehouse *bb 2" *cc in 250 sf rolls, of 16", 20", or 24" width.

HOURLY WAGE RATES—Base rate + fringe benefits

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const
Atlanta	$3.35	$2.80	$3.05	$2.80	$3.00	$3.20	$3.05+10¢c	$1.45	$1.45
Baltimore	3.45+10¢d	2.95+7½¢d	3.50+7½¢d	2.70/2.95+10¢d	3.25+7½¢d	3.30	3.20+7½¢c	1.60+7½¢d	1.60+7½¢d
Birmingham	3.50	2.60	3.00+7½¢a	2.42	2.92	3.175	3.05+7½¢a	1.50	1.60
Boston	3.50+10¢d	3.05+10¢d	3.55+7½¢a	3.50	3.50+20¢f	3.30+12¢ff	3.20+10¢d	2.30+7½¢f	2.30+7¢f
Chicago	3.62½+7½¢a	3.35+10¢a	3.55+7½¢a	3.25+5¢m	3.54+23¢a	3.48+21¢f	3.37+22¢mm	2.57½+7½¢a	2.57½+7½¢a
Cincinnati	3.60	3.30	3.35+7½¢a	3.075/3.325	3.375	3.50+3¢w	3.50+9½¢c	2.35	2.25
Cleveland	3.55+10¢	3.575	3.50+7½¢a	3.575	3.575	3.60	3.375+10¢c	2.825	2.75
Dallas	3.70	2.95	3.075	3.00+7½¢a	3.437+7½¢a	3.12½+7½¢a	3.10+7½¢a	1.55	1.55
Denver	3.625	3.075	3.00+7½¢a	2.93	3.30+7½¢a	3.00	3.17+15¢ff	2.00	2.00
Detroit	3.53+20¢mm	3.20+20¢z	3.47½+20¢f	3.20+20¢mm	3.51+24¢ee	3.50+30½¢ff	3.45+14¢ff	2.45+20¢mm	2.55+10¢e
Kansas City	3.70	2.90	3.075	3.055	3.375	3.20+13¢ff	3.15+7½¢a	2.155	2.18
Los Angeles	3.80	3.00+10¢d	3.40+10¢a	2.95+10¢d	3.75+12½¢g	3.60	3.525+10¢c	2.30+7½¢a	2.30+7½¢a
Minneapolis	3.425	3.00	3.17	2.95	3.05+25¢mm	3.12½	3.00+20¢ee	2.25	2.25
New Orleans	3.25	2.675	3.00+7½¢a	2.87½+7½¢a	2.80+5¢m	3.025+7½¢a	3.00+10¢c	1.55	1.55
New York	4.05+36¢ee	3.65+272¢ee	3.95+34¢ee	3.90+31¢f	4.00+50¢ee	3.50+35¢ee	3.85+35¢ee	2.60+21¢ff	26.0+21¢ff
Philadelphia	3.75+17¢r	3.385	3.55+19¢r/M3.15½/3.90½+10¢r		3.65+15¢rr	3.77+15¢mm	3.75+11½¢c	2.10	2.40
Pittsburgh	3.60+17½¢a	3.325+7½¢a	3.30+7½¢a	3.35+7½¢a	3.40+17½¢a	3.50	3.425+7½¢a	2.25+5¢m	1.98+10¢c
St. Louis	3.75+19¢r	3.25+7½¢a	3.25+7½¢a	3.325	3.425+7½¢a	3.60+25¢r	3.455+21¢ff	2.30+7½¢a	2.30+7½¢a
San Francisco	3.75+12½¢a	3.25½+10¢a	3.40+10¢a	2.98+10¢a	3.61+20¢mm	3.37½+23¢f/3.45+16¢ff		2.325+10¢a	2.325+10¢a
Seattle	3.55+10¢d	2.80+10¢d	3.07+10¢d	2.90+10¢d	3.27½+10¢d	3.10+19½¢ff	3.15+21¢ff	2.37+10¢d	2.37+10¢d
Montreal	2.10+14¢t	1.90+14¢t	2.00+14¢t	1.80+14¢t	2.12+18¢t	2.10+18¢t	2.12+18¢t	1.30+10¢t	1.30+10¢t
Toronto	2.61+10¢mm	2.40+10¢mm	2.40+10¢mm	2.50+10¢mm	2.45+16¢mm	2.65+10¢mm	2.44+10¢mm	1.45+6¢mm	1.45+6¢mm

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): $3.412. **ENR Common Average** $2.192

* Cost of living bonus now included in basic wage. † 8% fringe benefits. ‡‡ 4% vacation fund. *a 8 hr. day. *b 7 hr. day. *c 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% VF for electricians plus 5¢ WF, 1% PF. *d 10¢ H&WF. *e 10¢ VF. *f 8% WF. *g 11½¢ WF. *h $2.88 homes & housing plus 7½¢ WF. *i 17¢ WF. *j 10½¢ hr. WF. *k 7½¢ hr. WF. *l 4½% VF. *m 5¢ hr. WF. *n Plus 11% fringe benefits on gross wage ea. yr. *o 10¢ PF. *p 3% WF, 3% PF. *q 10¢ ins; 8¢ vac. and holiday pay. *r 4% WF and 20¢ PF. *s 5% W&PF, 4% VF, 1% NC, 6 PH. *t 7½¢ H&WF. *u 1½% PF. *v 10¢ WF. *w Negotiating. *x 5¢ VP. *y 23¢ WF. *z 5¢ HP. *A 15¢ WF, 15¢ PF, 20¢ B.F. *B 7½¢ VP, 5¢ PF, 1½¢ EF. *C 15¢ WF. *D 10¢ H&WF, 5¢ organ. *E 8¢ WF, plus travel pay per day. *F Plus $4 per day Annuity contrib. *G 3¢ Prom. *H 7¢ WF, 8¢ VF. *I 15¢ H&WF, 5¢ for Advtg. *J 5¢ WF, 6 PH. *K 25¢ W & PF, 15¢ VF. *L 3¢ WF, 3½ PF, 2¢ VF, 1¢ EF. *M 7½¢ PF. *N 1¢ WF. *O 10¢ WF, 1¢ PF. *P 10¢ hosp. ins.; 5¢ vac., 5¢ VF. *Q 1 drum, 2 drums 3.40/3.55+10¢. *R 12¢ WF and 1¢ apprentice. *S 12½¢ H and WF. *T 21¢ H, W & VF. *U 7½¢ WF, 4% VF, 1% PF. *V 5% WF, 3% PF. *W 2% F. *X 12¢ VF, & 7½¢ H & WF. *Y 7¢ H & WF. *Z 9½¢ WF. *aa 7¢WF, 15¢ PF. *bb 8¢ WF.

	Truck drivers 1½ T	Truck drivers 4 cy	Truck drivers +4 cy	Tractor Operators incl. bulldozers 34-49 hp	Tractor Operators incl. bulldozers 70-100 hp	Tractor Operators incl. bulldozers 100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.50	$	$	$2.525	$2.525	$2.525	$2.525	$3.05	$3.05	$2.525	$2.30	$1.67
Baltimore	1.60+7½¢m	1.75+7½¢m	1.85+7½¢m	2.85/3.30b	2.85/3.30b	2.85/3.30b	2.85/3.30b	3.40/3.55+10¢m	b 3.40/3.55+10¢m	b 2.85/3.30b	2.85/3.30b	2.25
Birmingham	1.60	1.79ll	2.05mm	2.56	2.56	2.56	2.70	2.70	2.70	2.61	2.285	1.65
Boston	2.195r			3.025d	3.025d	3.025d	3.025d	3.40	3.40	3.40	2.95	2.45+7¢r
Chicago	2.08+12¢ll			3.00+5¢r	3.15+5¢r	3.05+5¢r	2.85+5¢r	3.60+5¢r	3.60+5¢r	2.95+5¢r	2.95+5¢r	
Cincinnati	2.20mm	2.30mm	2.40mm	3.075	3.075	3.075	3.075	3.325	3.325	3.325	3.325	3.325
Cleveland	2.50+10¢m	2.50+10¢m	2.50+10¢m	3.325	3.325	3.325	3.325	3.575	3.575	3.325h	3.20	3.20
Dallas	1.55	1.55	1.55	1.55/2.625d	1.55/2.625d	1.55/2.625d	1.55/2.625d	1.55/2.625d	1.55/2.625d	1.55/2.625d	1.55/2.00d	1.70/2.00d
Denver	2.15	2.15	2.25	2.15	2.76	2.76	2.76	2.93	2.93	2.76	2.76	2.35
Detroit	2.45	2.45	2.45	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.025+10¢m	2.68+20¢mm
Kansas City	2.115n	2.115n	2.19n	2.30	2.85r	2.85r	2.85r	3.095	3.095	2.71	2.85r	2.24
Los Angeles	2.405+7½¢m	2.405+7½¢m	2.435+7½¢m	3.05+10¢m	3.05+10¢m	3.05+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	2.54+10¢m	2.51+7½¢m
Minneapolis	2.25	2.25o	2.40o	2.63	2.85r	3.07r	2.85	3.07r	3.33r	2.63	2.52	2.35
New Orleans	1.675	1.675	1.675	2.875	2.875	2.875	2.875	2.875	2.875	2.875	2.225	1.625
New York	2.12½+13¢mm	2.75+14¢kk	2.75+14¢kk	3.27½+262¢ee	3.27½+262¢ee	3.27½+262¢ee	3.40+272¢ee	4.15+332¢ee	4.15+332¢ee	3.40+272¢ee	3.40+272¢ee	3.00+15¢ee
Philadelphia	1.925/2.15+7½¢m			3.15½/3.90½+10¢m		3.15½/3.90½+10¢m	3.15½/3.90½+10¢m	3.15½/3.90½+10¢m	3.15½/3.90½+10¢m	3.15½/3.90½+10¢m	2.97½+10¢m	2.13½+10¢m
Pittsburgh	2.20+7½¢m	2.20+7½¢m	2.20+7½¢m	2.87½+7½¢m	3.20+7½¢m	3.27½+7½¢m	3.025+7½¢m	3.35+7½¢m	3.35+7½¢m	3.25+7½¢m	3.35+7½¢m	2.20+7½¢m
St. Louis	2.30+7½¢mm			3.325hh	3.325hh	3.325hh	3.325hh	3.325hh	3.325hh	3.325hh	2.775hh	2.775hh
San Francisco	2.32½+10¢m	2.32½+10¢m	2.465+10¢	3.095+10¢m	3.095+10¢m	3.095+10¢m	3.095+10¢m	3.425+10¢m	3.425+10¢m	3.255+10¢m	2.705+10¢m	2.425+10¢m
Seattle	2.03+7½¢mm	2.03+7½¢mm	2.03+7½¢mm	2.78+10¢m	2.95+10¢m	2.95+10¢m	2.95+10¢m	3.30+10¢m	3.30+10¢m	3.10+10¢m	2.78+10¢m	2.52+10¢m
Montreal	1.30+10¢ll	1.30+10¢ll	1.30+10¢ll	1.73+14¢ll	1.73+14¢ll	1.73+14¢ll	1.73+14¢ll	1.99+16¢ll	1.99+16¢ll	1.73+14¢ll	1.80+15¢ll	1.60+15¢ll
Toronto	1.47+6¢mm	1.65+6¢mm	1.65+7¢mm	1.90+5¢mm	2.00+10¢mm	2.00+10¢mm	1.90+5¢mm	2.50+16¢mm	2.50+16¢mm		2.05+5¢mm	2.05+5¢mm

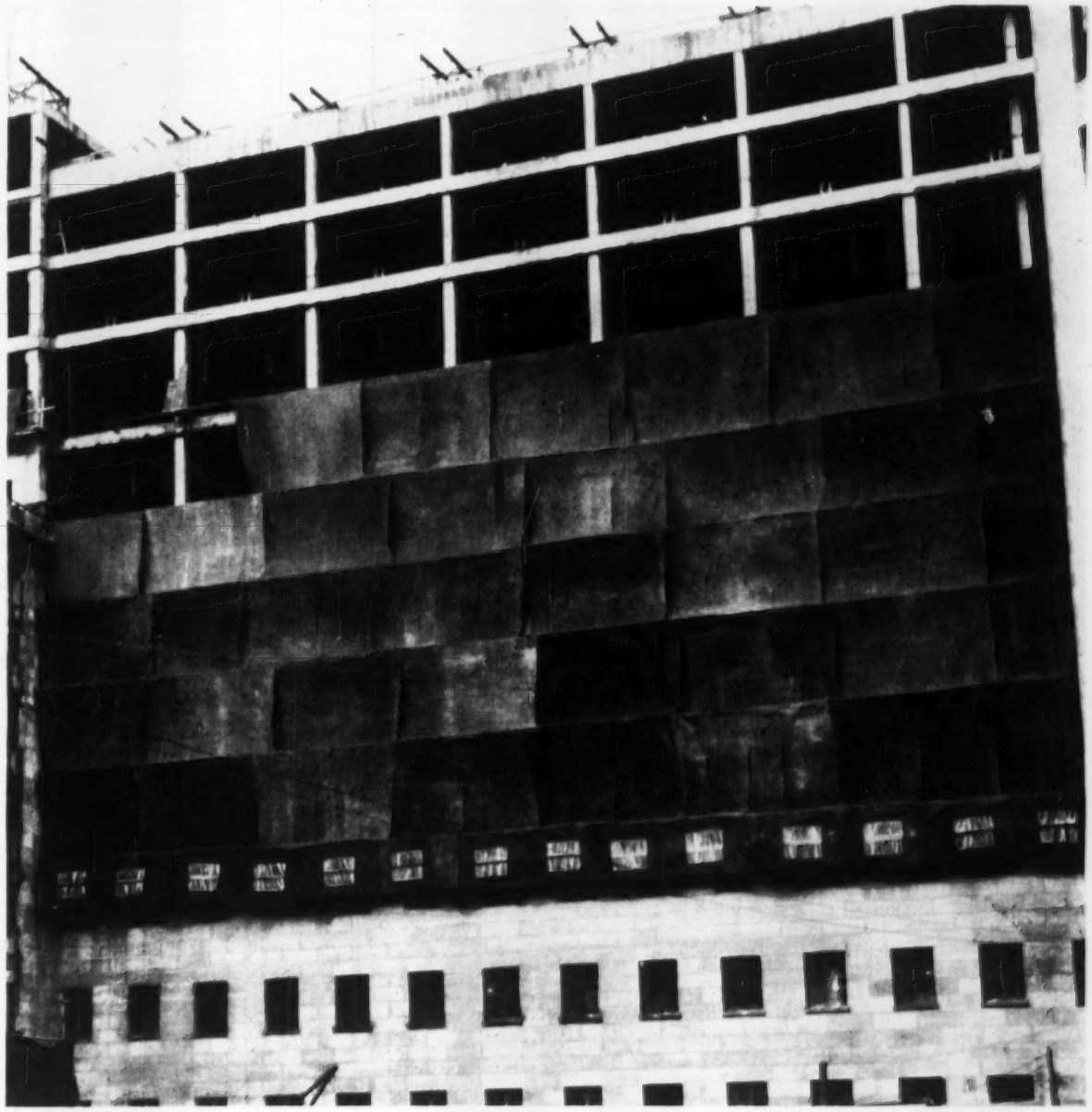
*a 5¢/hr HWF *b lower rates, straight time, other broken *c 2-axle; 10-wheel $2.25; Euclid $2.45 *d Intermediate *e bldg constr; highway $2.55+7¢ WF *f less than 2-t *g blade *h scoop, bldg *i scoop, road *j plus $2 pd by employer for hosp. death benefits to family *k bldg constr; steel constr $3.475 *l higher rates are union, other taken from min wage scale approved by County Commissioners Court *m 10¢ H&WF *n flatbed *o under 10 cy *p over 10 cy *q over 50 hp *r blade grader *s form and subgrade *t single *u 7½¢ HWF *v up to 6 cy *w 6-8 cy *x cat oper *y up to 3½ cy *z 3½ cy & over *aa plus approx $5.30 per wk W&PF *bb 3% WF, 2% PF, 11 PH *cc 4% WF & 4% PF *dd up to 5 cy *ee 5 cy & over *ff over 1½ T but not over 3 *gg up to 5 tons *hh excavating *ii 4% VP *jj 12¢ H, W & PF *kk 7½¢ WF included in base pay *ll 8% fringe benefits *mm 10¢ H & WF, 10¢ Insurance *nn 8 cy or less; 8-16 cy $2.90; 16-25 cy $3.15 *oo Plus $2.25/wk WF *pp 2-5 T $1.70 *rr 12¢ WF *ss 5¢ WF.

MEXICO CITY PRICES

In Pesos, f.o.b. City		May '56	June '56
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.38	1.38
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.38	1.38
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.46	2.46
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.46	2.46
Struct. Iron Workers (8 hr. day)			
Remachadores	av. per hr.	3.77	3.77

		May '56	June '56
Struct. Steel, Shapes			
3"-15" x 12 meters	per metric ton	1564.34#	1564.34#
# fob Monterrey			
Reinf. Steel, Corr. Rods			
¼" x 11 meters	per ton	1865.00	1865.00
⅜" x 11 meters	per ton	1865.00	1865.00
½" x 11 meters	per ton	1865.00	1865.00
⅝" x 11 meters	per ton	1865.00	1865.00
¾" x 11 meters	per ton	1865.00	1865.00
1" x 11 meters	per ton	1865.00	1865.00

		May '56	June '56
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	70.00	70.00
Rose Gravel	per tr. load	65.00	65.00
Cement, Std. Port. (Tolteca)	per ton	230.00	230.00
Lumber			
3rd Class Pine	per M ft.	1900.00	1900.00
1st Class Pine	per M ft.	2750.00	2750.00
2nd Class Pine	per M ft.	2300.00	2300.00



UNDERCOVER PROJECT – During the construction of this mammoth $14,000,000 building – soon to be occupied by the University of Pittsburgh Schools of the Health Professions – a great deal of work was carried on in severe winter weather and over several sections of the building at one time. In order to maintain uninterrupted construction schedules, Ragnar Benson, Inc., General Contractors, utilized a considerable number of these large protective tarps made of Mount Vernon canvas. At one time, nearly 500 giant tarps were simultaneously in use to protect workmen, masonry and freshly set limestone facing from the ravages of the weather. Tarps manufactured by Pittsburgh Waterproof Company.

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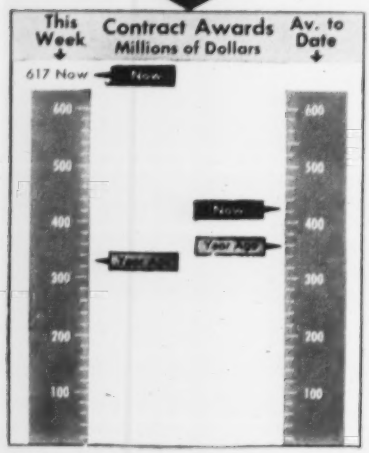
Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 35 wks 1956	Chge %
	$ millions		
Federal	$24.2	$1,185.2	−0.1
State and Municipal	126.9	4,400.6	+20
Total Public	151.1	5,585.8	+15
Total Private	465.5	9,441.4	+20
U. S. Total	$616.6	$15,027.2	+19
By Type of Work			
Waterworks	$6.8	$245.1	+34
Sewerage	11.8	406.8	+57
Bridges	5.8	409.1	+28
Highways	50.3	1,654.0	+11
Earthwork, waterways	15.2	518.2	+46
Buildings:			
Public, Excl. Housg.	55.6	1,384.9	+17
Public Housing	...	218.0	+2
Private Housing	263.8	3,970.9	−7
Commercial	19.5	1,215.0	+3
Industrial	154.9	3,787.7	+101
Unclassified	32.9	1,217.5	−11
U. S. Total	$616.6	$15,027.2	+19

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

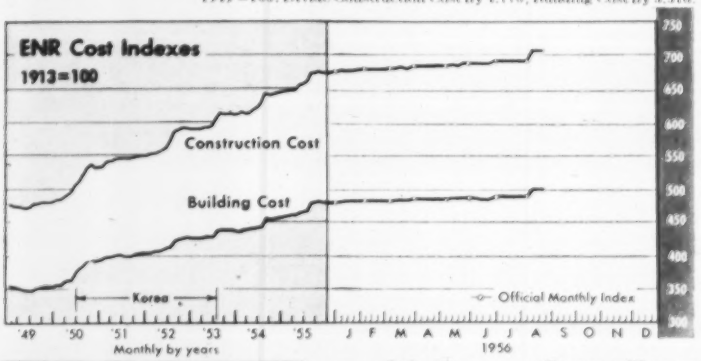
NEW CAPITAL FOR CONSTRUCTION

	Week of Aug. 23	Cum. 34 wks 1956	Chge '55-'56 %
	$ millions		
Corporate securities	$92.9	$3,121.3	+42
State and Municipal:			
All Except Housing	33.8	3,042.7	+10
Housing	...	42.3	−41
Federal Loans	...	122.9	+39
Federal Aid	...	1,070.0	+25
Total Nonfederal	$126.7	$7,399.3	+21
Federal Appropriations:			
In U. S.	$...	$3,460.3	+2
Outside U. S.	...	15.9	−81
Total New Capital	$126.7	$10,875.5	+15

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Aug. 23, 1956	% Change from July 26, 1955	% Change from Aug. 25, 1955
Construction Cost	705.54	+1.3	+4.9
Building Cost	500.73	+2.0	+4.6

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.845.
1949 = 100: Divide Construction Cost by 1.770; Building Cost by 1.518.



BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	July 31, 1956 (millions)	Percent Change from last Month	Year
Total U. S. (ENR reported)	$100,367	+0.2	+17.0
By Ownership—			
Private	42,973	+0.1	+21.4
State & Municipal	44,579	+0.6	+16.0
Federal	12,815	−0.7	+7.1
By Type of Work—			
Waterworks	2,066	0	+14.3
Sewerage	3,091	+1.6	+3.9
Bridges	2,884	+0.7	+6.0
Highways	11,626	+0.2	+3.4
Earthwork, Waterways	11,247	+0.6	+19.8
Public Buildings	17,901	+0.4	+14.1
Industrial Buildings	15,854	−1.1	+26.7
Commercial Buildings	17,619	+1.3	+23.1
Unclassified, Private	9,500*	+0.2	+10.9
Unclassified, Public	8,579	−0.6	+30.6
By Regions—			
New England	5,561	+1.6	+11.5
Middle Atlantic	21,211	+1.1	+11.4
South	11,918	−1.4	+18.9
Middle West	17,587	−0.8	+14.9
West of the Mississippi	23,264	+0.2	+9.9
Far West	20,826	+0.8	+36.4

*Includes private bridges, $90 million.

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1956 July	1956 7-Months (millions)	Percent Change from '55 July	Year Cum.
Total U. S. (ENR reported)	$1,378	$14,978	−13	+19
By Ownership—				
Private	761	8,119	+22	+45
State & Municipal	609	6,049	−30	−10
Federal	8	810	−91	+158
By Type of Work—				
Waterworks	53	238	+19	−17
Sewerage	76	322	+107	+37
Bridges	31	303	−47	−49
Highways	122	831	−80	−73
Earthwork, Waterways	78	468	+3,350	+45
Public Buildings	249	2,896	+92	+71
Industrial Buildings	344	3,739	+27	+83
Commercial: Mass Housing	206	2,084	+39	+20
Other Building	178	1,579	+46	+19
Unclassified, Private	34**	717***	−60	+41
Unclassified, Public	8	1,301	−88	+271

**Includes private bridges, $208,000.
***Includes private bridges, $13 million.

Money Scarcity Puts Brake on Boom

Federal Reserve hikes discount rate to 3%; prime rate up; local public works hit new snags in weakened bond market

Developments last week in the nation's money market could put a big hole in contractors' prospects for new construction business later this year and in 1957.

An already drum-tight money market will be even tighter because of the latest increases in the Federal Reserve discount rate and the prime rate which commercial banks charge their best credit risks.

Interest rates are up again; less money will be available to finance construction of both public and private projects.

For construction, the continued tightening carries the strong threat that the boom will be badly balanced, with industrial building and highways surging ahead while some other types of construction lose ground.

Mass housing was the first victim of the tight money policy. Commercial building, dependent to some extent on mass housing volume, was the next to suffer. Now public works at the local level face financial trouble.

Even before the latest money squeeze, local public works agencies and municipalities were having trouble borrowing construction money because of the chaotic bond market.

Some cities withdrew bond issues because of the high interest rates. Others went into the market and found they could not get bids for their bonds. And, still others called for bids but rejected them because they were too high.

More public works bond issues will be deferred in the months ahead. This could hold up many sewerage, water supply, and school construction programs.

• **Why tighten up**—In the face of these tangible threats to the construction boom, why did the Federal Reserve Board encourage the latest credit squeeze? The answer Fed officials give is a fear of inflation that has been more worrisome in recent weeks.

Pressure has continued to build up in the money market because banks are being flooded with requests from borrowers for loans to meet the seasonal rise in business that traditionally starts with Labor Day and runs through Christmas.

This demand for loans for working capital and inventory buildups comes at a time when industry has been taking an enormous amount of investment capital and bank funds to finance spectacular plant and equipment programs.

Alarmed over inflationary threats, some stemming from higher prices that followed the steel settlement, the Federal Reserve Board was ready to put on the brakes, at the first sign of trouble. It wasn't long in coming.

Ten days ago, the Treasury went into the money market to sell 91-day bills and had to pay an interest rate of 2.818%, the highest cost for such short-term Treasury borrowing since the bank holiday in 1933.

By outrunning the Federal Reserve's discount rate, which it almost always lags, the Treasury bill rate spelled out just how tight the money market is. And, it led Wall Street to predict a quick hike in the discount rate, the price banks pay for money when they borrow from the Federal Reserve.

• **Prime rates goes up**—Two days later, without waiting for the Fed to act, leading banks across the nation raised the prime rate to 4%, highest in 23 years.

The prime rate is reserved for the best credit risks. Some banks commented that in addition to raising the prime rate they would prune their lists to reduce the number of firms that qualify for this minimum interest rate.

Higher interest rates will discourage some "marginal" borrowers from going ahead with projects at this time, bankers said. And, those who aren't discouraged will often be turned down, especially if they need bank funds for plant and equipment expenditures.

• **Discount rate goes up**—After the commercial banks raised their prime rates, there was little doubt about a new raise in the Federal Reserve's discount rate. The hike came last Thursday. It reinforced the Fed's determination to keep money tight in an attempt to prevent inflation.

The Fed approved an increase in the discount rate from 2.75% to 3% for the New York, Philadelphia, Richmond, Va., and Chicago reserve banks. Two of the regional banks, Minneapolis and San Francisco, adopted the 3% rate in April.

As soon as directors of the other regional banks approve, the 3% rate will go into effect in Boston, Cleveland, Atlanta, St. Louis, Kansas City and Dallas. That will complete the sixth increase in the discount rate in 16 months.

• **No money, no boom**—The Fed's tight money policy has been under fire from some segments of the construction industry (homebuilders in particular) for months. With the latest tightening of credit, more dissenters will join the ranks, because mass housing is not the only type of construction that is being hurt.

Commercial building began to re-

Financing Delays Projects

Some public works projects in Florida are being delayed because of the poor bond market.

School projects in 17 counties are on the deferred list. Since June, the State Board of Education has been waiting for the money market to improve so that the state could sell a $9.3 million bond issue, one of the final pieces of the $100 million school building program.

These school bonds probably will be held up for at least another month or two because of the continued weakness in the tax-exempt bond market.

An even bigger item on the deferred list is the $70 million Inter-American Trade and Cultural Center at Miami. The first $25 million bond issue for this has been held up because of the weak bond market.

And, the Florida Development Commission is holding in abeyance a $5.5 million bond issue that will be used to finance two bridges and related approaches in Sarasota County.

flect the housing slump, turning down after the first quarter. Now, state and municipal public works programs are threatened.

Mass housing, commercial building and non-federal public works have been crowded out of the money market by industry which is borrowing at a fabulous rate to finance spectacular expansion programs.

High interest rates have not deterred industry borrowing to the same extent that high money costs have held back the mortgage and municipal markets. The reason is that in the last analysis, industry is paying less to borrow money than the others.

Because of the 52% corporation tax, a 5% interest rate on corporate securities may cost the borrower less than 2½% in real interest. And, with business volume still strong, industry has been willing to pay the price.

• **First in line**—As a result of this, industry has been first in line at the money market and has garnered large amounts of investment capital and bank funds that would have gone into the mortgage and municipal bond markets.

Even the 34-week total of sales of corporate securities for construction, which is up 42% over last year, doesn't tell the whole story.

The reason is that in the first quarter of this year, corporate borrowing for construction actually trailed 1955 by 7%. Then the lid blew off. Second quarter financing soared 52% above the year-ago rate, and in the third quarter, sales of corporate securities for construction are more than double the comparable 1955 rate.

Municipal bond sales for construction are going down while corporate security sales are going up. It's true that for the first 34 weeks, municipal bond sales are running 8% ahead of last year. But, most of this gain came in the first quarter, which was up 19%. The second quarter was only 9% ahead of 1955, and so far in the third quarter, municipal bond sales are 5% under the year-ago figures.

Because states and municipalities rely heavily on bond issues for construction financing, a poor bond market quickly affects scheduling of contract lettings.

ENR's figures show that the trend in state and municipal contract awards has followed the trend in bond sales this year, although awards continue to stay above the year-ago level, the margin has been shrinking.

First quarter awards were up 36% over last year; second quarter awards were only 16% higher; so far, third quarter awards are only 13% above 1955. The trend is a clear warning of a substantial downturn in non-federal public works unless money gets easier.

• **No easing**—The money managers aren't likely to ease credit despite the slump in housing, the downturn in commercial building and the threat to some types of local public work. They make that clear in private conversation.

Officials are convinced that inflation is again a lively threat and that tighter money is the medicine needed. The Fed held the same view in April, the last time the discount rate was raised.

Top men in the Eisenhower Administration argued against tightening of credit in April. One of the major critics was Arthur F. Burns, chairman of the President's Council of Economic advisers.

He felt that tighter money wasn't needed because there were "soft spots" in the economy that pointed away from inflation. Those soft spots included housing, auto sales and farm prices.

Burns hasn't commented this time. But, since April auto sales have firmed up, farm prices have risen and retail trade has made substantial gains. Only one of the April soft spots—housing—remains. On that basis, the Fed's tight money policy is difficult to criticize. But it's vulnerable on other grounds.

One criticism of the Fed's policy is that it is relying too heavily on only two segments of construction—industrial building and roadbuilding.

The Fed sees no let-up in industry's capital spending, and, of course, the new road program assures a high level of construction in that field for years. As a result, the Fed admits that some types of construction suffer when money gets tight, but claim that can be a blessing to the economy as a whole, no matter how painful it is to builders.

"What if we'd had a housing boom along with every other increase in business this summer?" One official asks visitors. His own answer: "We would now be on an all-out inflationary binge and headed for certain trouble."

• **Stitch in time**—As long as the economy stays at a high level, construction will get no help from the money managers. But the "high level of the economy" generally is measured by the Fed in terms of actual spending.

The trouble with this is that spending figures don't give any advance warning. They show a downturn only after it has arrived. That's why the behavior of contract awards is important. Awards represent future spending, spot weaknesses early enough so that policies can be changed in time to avert serious trouble.

If the indicated downtrend in contracts for state and municipal construction other than highways and commercial building gains momentum, the impact will be felt on future construction expenditures. And, it would go a long way toward offsetting the increased spending for industrial building and highways.

Flood Insurance

Companies are skeptical; agree to work out plan; coverage, rates a problem

Officials of private insurance companies last week met with top men in the Housing and Home Finance agency in an attempt to start planning specific details of the new, government-subsidized flood insurance program passed by the 84th Congress in the wake of the disastrous New England floods.

The insurance men were openly skeptical about the Administration's hope that the government subsidies could be withdrawn within three years and the program carried entirely by private enterprise.

However, the insurance companies agreed to work out basic details of the flood insurance plan and to submit their proposals to HFA during the next few months.

It will be some time before the first flood insurance policy is written under the new program. Neither the companies nor the government have any previous experience in this field upon which they can draw.

Frank J. Mestrell, acting administrator of the HFA, and the man directly charged with developing and administering the new program, has commented:

"This is an entirely new and untested field of indemnity protection, and we are starting from scratch."

To finance the extensive research that is necessary before coverage and rates can be determined, Congress gave HFA $500,000.

One of the reasons for the prolonged period required to set up procedures is that Congress wrote the Flood Insurance Act in the broadest terms possible and left to the Administration the task of working out

operating details and even the scope of the program.

• **What the act provides**—Under the Flood Insurance Law, Congress authorized the HFA administrator to undertake three related operations:

• Issue insurance to indemnify losses from flood and tidal waters up to a maximum of $250,000 for any one person, and $10,000 for any dwelling unit.

• Re-insure private companies who undertake to write flood insurance on a private basis.

• Contract to underwrite or make loans for the rehabilitation or reconstruction of approved properties lost or damaged in floods. (This is to assure an adequate line of credit at the time of the disaster.)

Private insurance companies have long contended that they could not write flood insurance because the only persons who would buy such insurance would be those in definite danger. In short, only the "bad risks" would buy. And, because there would be no way to spread the losses, premiums would be so high that not even those in the flood plains could afford to buy the insurance.

To meet this objection, at least on a temporary basis, the act spells out the government subsidy.

Until July 1, 1959, the federal government will pay up to 40% of the premiums necessary to "support the program on a solvent basis." After that date, the states must share the subsidy equally with the federal government.

• **Emphasis on private**—While this first stage of the program under which the government itself does the insuring, limits the liability, the second part, to be handled by private companies, does not.

The reinsurance program operates something on the order of FHA-insured mortgage loans, where a lender is merely assured that up to a certain point, the government will pay any losses he suffers in writing certain mortgages.

The government doesn't actually loan the mortgage money in that case. And, under the reinsurance program of the Flood Insurance Act, the government won't be handing out any cash. It will merely insure the insurance company against loss.

This part of the program involves no federal subsidy. HFA is required to set up a fee schedule that will cover any claims for losses under the reinsurance program.

Another big point in the reinsurance program is that it can be used in connection with the government's direct insurance plan.

Under the direct government insurance program, a house can be insured only for a maximum of $10,000. But, a person with a $25,000 home, for example, could get $10,000 worth of coverage under the direct insurance program and then get another $15,000 worth from a private insurance company.

• **Enforce flood zoning**—Although liberal in concept, the new flood insurance act does include one provision considered essential for any realistic plan. It rules out government aid for those who violate state or local flood zoning laws.

And, after June 30, 1958, "no insurance, reinsurance or loan contract" will be issued in any area unless the state or locality has adopted—and enforced—"such flood zoning restrictions, if any, as may be deemed necessary by the Administrator to reduce within practicable limits damages from floods in such location."

That leaves to the local governments, the responsibility of keeping firms and individuals from building in areas that are likely to be flooded. But, it also leaves to the federal government, the right to decide whether the zoning laws are strict enough and whether they are enforced properly.

Urban Renewal

City tries novel bond plan to finance redevelopment

Sacramento, Calif., is trying a new bond device to finance a major redevelopment project. It could set a pattern for other cities.

The city sold a $2-million issue of "tax allocation" bonds to Blyth & Co. to pay for an initial 15-block urban renewal project.

The interest rate the city will have to pay is high (4.498%) but officials attribute this to the novelty of the bond.

Interest and principal will be paid from "excess taxes" collected in the project area as a result of increased valuation over levels shown on the 1955-56 tax rolls.

Taxing agencies will continue to receive the same amount of money in future years that they will receive on the basis of current valuations. But, since assessed valuations will rise as the property is improved, there will be extra money available. This money will be placed in a special fund to retire the "tax allocation" bond issues.

The bond issue will not cover the entire cost of the initial redevelopment project. Estimated gross cost of the project is $10.4 million. The city's redevelopment agency hopes to realize $5 million from sale of improved and cleared land.

Federal cash grants and the new tax allocations bonds will finance the balance of the project.

Novelty of the new bond plan was stressed by H. Harold Leavey, member of the redevelopment agency and vice president of the California Western States Life Insurance Co. Leavey said:

"This means of financing is new to California and to the United States. It was enacted into law in 1951 and specifically approved in an amendment to the constitution of California. . . .

"Forecasts have been made . . . that numerous other California cities will follow similar procedures. It is also expected that a number of other states will enact legislation in financing their redevelopment projects."

The 15-block area that will be redeveloped is west of the state capitol and east of the Sacramento River in the city's oldest section. Other areas in this section will be cleared later and redeveloped.

Business Briefs . . .

• **Big week**—Private mass housing had a fabulous week and industrial building was strong, as ENR's contract awards climbed to $616.6 million. With this latest push ($154.9 million) contract awards for industrial buildings for the first 35 weeks are running 101% over 1955.

• **Luxury housing**—Mass homebuilder Levitt & Sons is returning partially to the firm's original market—luxury housing. The site: a 145-acre tract in Radnor Township, Pa., along Philadelphia's main line. The development could cost as much as $20 million.

• **Lumber merger**—Long Bell Lumber, a major producer of lumber and plywood, is in line for a corporate marriage. If stockholders approve at October meetings, Long-Bell will become a division of International Paper Co.

• **Redevelopment**—The Roanoke, Va., Redevelopment and Housing Authority unveiled preliminary plans for a $35-million redevelopment plan involving 1,500 acres in the center of the city. And, in New York City, officials upped the cost estimates for the mammoth Lincoln Square Redevelopment Project from $150 million to $175 million.

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Another Look at Taft-Hartley

The Democrats promise to repeal, Republicans to improve, a labor law that has never fitted the construction industry

In San Francisco last week the Republican party went along with the Democrats in promising an overhaul of the Taft-Hartley Act. Revision of the law, which has always sat uneasily on the construction industry, has long been a strong and controversial issue.

The Republicans have offered to "overhaul and improve" the law along the lines recommended by President Eisenhower in 1954. The Democrats, on the other hand, are "unequivocally" committed to the law's repeal. But in the campaign oratory that lies ahead this may add up to little more than the Eisenhower proposals, except for elimination of right-to-work laws.

The politically crafty words in the respective platforms, both humanitarian in tenor, are strung together on a number of common threads that lead to this basic proposition: any changes made in the Taft-Hartley Act, whether by repeal or amendment, must be based on the principle of free collective bargaining, must be consistent with the public interest and must protect the legitimate interests of management as well as those of labor. In addition, the Democratic platform implicitly approves the Eisenhower proposals.

• **Scope**—Those proposals, which covered 12 phases of the law and which were presented to Congress on Jan. 11, 1954, were designed to reinforce the basic objectives of the Taft-Hartley Act. Several were directed specifically at the peculiar requirements of the construction industry. Among them were these:

(1) To remove from the ban against secondary boycotts action taken by labor unions against secondary employers working at a construction site with the primary employer.

(2) To permit the construction industry to use prehire contracts requiring membership in the union within seven days after starting work.

(3) To make the application of injunctions in secondary boycott cases discretionary instead of mandatory.

(4) To authorize the states to assume jurisdiction over labor disputes which can't be taken to the National Labor Relations Board because the board has declined jurisdiction.

(5) To give workers the right to vote by secret ballot on the question of whether they wish to strike.

The Eisenhower proposals were considered, and except for the strike ballot, were favorably recommended by the Senate Committee on Labor and Public Welfare in 1954. At that time, the committee concluded that the peculiar nature of the construction industry merits special consideration, largely for these reasons:

• The short duration of construction jobs denies construction unions the "substantial" benefits of the union shop provision, although the unions remain subject to all restrictions.

• Another inequity stems from the practical inability to conduct certification elections in the building trades, which puts those unions at a disadvantage in protecting themselves against raiding by others.

• In many cases, the only way contractors can properly estimate labor costs is to enter into a collective bargaining agreement, or prehire contract, with the appropriate craft unions before work is begun or employees hired.

• Because of the mutual interests of all contractors at a common construction site, none of the employers can be considered neutral and a dispute with one should be considered a dispute with all.

The proposals on secondary boycotts, prehire contracts and injunctions were endorsed by the AFL-CIO building trades and were last incorporated in two bills presented unsuccessfully to the 84th Congress: S. 1269 and H. R. 4565.

• **Right-to-work**—Not included in the Eisenhower proposals or in the 1956 Republican platform is the right-to-work issue, which the Democrats have flagged (see page 78).

Their approach is to kill state right-to-work laws by passing new legislation that would forbid the states to enact them. The theory advanced is that the federal government has already preempted the field by legalizing union shop contracts.

The Republicans kept mum on the issue. But they face a rather big dilemma. Their strong stand on states' rights and decentralization of power goes hand in hand with the delegation to the states of the right to legislate on compulsory unionism which, in turn, precludes doing anything effective with prehire contracts.

• **New law?**—In place of the Taft-Hartley Act, the Democrats have proposed a new labor law but they haven't attempted to define it. They say, however, that the law would be based on past experience and would utilize some of the principles of the Wagner Act as well as of the Norris-LaGuardia Act, which was passed in 1932 to give labor unions relief from injunctions issued by federal courts.

In advocating repeal of the Taft-Hartley Act, the Democrats have given themselves considerable leeway. For they've gone beyond what even the AFL-CIO requested. In the past, labor has felt it's safer to gamble with amendments than repeal. All the AFL-CIO asked for was elimination of existing inequities by "complete overhaul" of the law "to make it fair and just to labor and management alike, while protecting the public interest." It gave particular attention to elimination of right-to-work laws and to additional curbs on the powers of the NLRB, whose jurisdictional standards have often left both management and labor without the protection of either state or federal legislation.

Building Trades Block North Carolina Merger

AFL unions in North Carolina have voted overwhelmingly against merging with the state CIO organization.

By a vote of nine to one, delegates to the annual convention of the North Carolina State Federation of Labor (AFL) refused to merge with the State Industrial Council (CIO) until a "more acceptable" agreement is reached. They voted, instead for a new committee to continue negotiations.

The rejection stemmed from the building trades' concern over their jurisdictional conflict with industrial unions and occurred the day after the State Building and Construction Trades Council had voted two to one against the state merger.

Under the AFL-CIO constitution, state groups are given until December 1957 to complete their mergers. So far, this has been accomplished in only 13 states. Most of the resistance has come from the building trades, which earlier in the summer started a campaign, now called off, to slow down mergers on the state level until they were assured their jurisdictional interests would be protected.

Voters face big role in . . .

The Right-to-Work Issue

Although the platforms adopted by the Democratic and Republican National Conventions have given right-to-work laws a new dimension as a labor issue on the national level, the immediate center of political activity continues to be the states, where the only effective action for or against such laws can be taken as long as the Taft-Hartley Act remains in its present form.

Three states have already claimed the issue for voter attention in November. A right-to-work proposal has been initiated in the state of Washington and will appear on the ballot for acceptance or rejection. If approved, it will become law on December 6. Nevada, which has such a law, is giving its citizens a chance to vote for the law's repeal. Efforts in that direction have failed twice before. And in Kansas, right-to-work proponent Warren Shaw is running for governor on the Republican ticket after defeating in the primaries Gov. Fred Hall, who last year vetoed the state's right-to-work bill.

• **The issue**—There are now 17 states, all in the South, Middle West and West, with right-to-work laws.

The typical law states that an individual shall not be denied a job because of membership or nonmembership in a labor union, and outlaws agreements with such conditions.

A special provision—Section 14 (b) in the Taft-Hartley Act—waives the doctrine of federal supremacy with respect to this type of legislation. In effect, it says that the federal provision authorizing union shop contracts (which require union membership after a 30-day grace period) doesn't apply in those states which wish to prohibit compulsory unionism.

To organized labor, right-to-work laws give nonunion members a free ride on union coattails as far as wage standards and working conditions go, unjustifiably remove a legitimate issue from collective bargaining, and are a device for reducing the effectiveness of unions and for destroying the trade union movement itself. Advocates of the law say compulsory unionism—whether in the form of a closed shop or a union shop—denies an individual one of his basic freedoms.

• **Its future**—Repeal of Section 14 (b)—which would automatically kill all right-to-work laws—has long been sought by the building trades. Earlier this month, the AFL-CIO formally asked both the Republican and Democratic National Conventions to support its repeal. U. S. Secretary of Labor James P. Mitchell urged the Administration to seek a repeal plank. The Democrats came out unequivocally for repeal. The Republicans ducked the issue and made no definite commitment (see page 77).

The net result is that the issue will be a lively one for the purposes of November balloting on both state and national levels. Sponsors of the Washington right-to-work proposal, for example, have already spent $75,898 in their efforts to get such a law and the AFL-CIO is out to meet the challenge.

Meier and Patterson Win UA Apprentice Contests

Winners of the Third Annual International Apprentice Contest held by the plumbers union at Purdue University this month were John Meier (plumber), Local 8, Kansas City, Kans., and Robert Patterson (pipefitter), Local 449, Pittsburgh, Pa. As first place winner in the contest of his trade, each received a $1,000 cash award.

Forty-two plumber and 32 pipefitter apprentices, each in his fifth year of training, competed from 40 states and three Canadian provinces. Awards were presented at the United Association's 1956 convention in Kansas City, Mo. At that time, the UA apprenticeship program was described by William Patterson, director of the federal Bureau of Apprenticeship, as "one of the best in the nation".

The program is conducted by the UA in cooperation with the National Association of Plumbing Contractors, the Mechanical Contractors of America, Inc., and the National Association of Master Plumbers and Heating Contractors of Canada.

September Deadline Is Set In AEC Travel Pay Dispute

Deadline for contractors to accept or reject recommendations by an AEC labor relations panel to end the Hanford Plutonium Works' longest strike has been set as Sept. 12. The panel in July recommended continued isolation pay and free bus service for teamsters, cement finishers and operating engineers working on construction projects inside the reservation.

The dispute, which arose when contractors discontinued isolation pay and bus service at the time the workers were taken out from under the project agreement, halted construction for approximately two months and put 1,300 workers off the job. Teamsters, operating engineers and cement finishers agreed with contractors in June to submit the dispute to an AEC panel.

The panel recommended continuing the free bus service and isolation pay, amounting to $2.62½ daily.

Union members returned to work pending the panel's decision. Contractors said compliance with recommendations violates union agreements.

Western Labor Group Urges Two Reforms

At its 54th Annual Convention, the federation adopted a resolution that would require contractors on public works construction to pay workers, in addition to the prevailing wage as now determined, an additional amount equal to the health, welfare, pension and other fringe benefits paid organized workers on private construction work in the area. It also passed a second resolution asking similar payments to state employees engaged in maintenance and construction work.

The resolution relating to public contracts said "the failure of the law to require contractors to provide for the payment of such fringe benefits creates an inequity, and works to the disadvantages of both union employees and contractors who abide by union conditions". Similar in purpose to the recently amended New York law and to the AFL-CIO proposed amendments to the Davis-Bacon Act, it is expected to be presented to the next session of the state legislature.

Turning its attention to the licensing of contractors, the federation proposed that contractors be required to post adequate bonds to cover unpaid debts and wages that fly-by-night and financially irresponsible contractors may leave behind. Its principal criticism was leveled at those who obtain the right to engage in contracting work through the licensing of a qualified employee or other person purportedly connected with the firm.

Jurisdictional Dispute Halts Chrysler Project

A jurisdictional dispute between the building trades and a railroad maintenance of way union has halted construction work on the new $85 million Chrysler Corporation stamping plant—largest in the world—in Twinsburg, Ohio.

To service the plant by rail, a spur line had to be built from the Pennsylvania Railroad's main line, three miles away, to the plant, plus additional tracks on the plant's 34 acres of property. The railroad undertook to lay the track up to the plant property, using members of the Brotherhood of Maintenance of Way employees.

More than 1,200 construction workers, associated with the Tri-County Building Trades Council and employed by H. K. Ferguson Co. and Hunkin-Conkey Construction Co. (plant contractors), left their jobs in protest of the work assignment to the railroad union. They claimed that the spur line is an essential part of the plant and hence of its construction, even though outside the plant property.

The railroad union does not dispute the jurisdictional right of construction workers to lay track inside the plant property, but say the work outside the plant belongs to them under both their charter and their contract with the railroad.

Last week, the strike rolled on for its second week, after attempts to settle through federal mediation had failed.

British Columbia Plumbers Top Canadian Wage Scales

British Columbia plumbers became the highest paid building trades workers in Canada this month, when Local 170 agreed to a two-year contract granting a total wage increase of 39 cents an hour.

The contract was negotiated with the B.C. section of the National Master Plumbers Association, which represents 135 employer groups.

Basic hourly wages for plumbers were immediately boosted by the contract from $2.35 to $2.55, with deferred increases to $2.70 on January 1 and to $2.74 on April 1 next year. According to James Barton, union business agent, the increases are the largest ever won at one time by any building trades union in Canada.

Engineers Strike Over Maintenance

Disagreement over a proposed contract clause relating to maintenance of small power equipment such as saws, buggies and concrete vibrators triggered off a state-wide "no contract, no work" strike of operating engineers against building contractors in New Jersey this week.

Negotiations for a new state-wide contract between Local 825 (hoisting and portable engineers) and the Building Contractors Association of New Jersey have been under way for two and a half years. Agreement had been reached on wages but not on working conditions. Principal stumbling block has been the local's request for a clause that would require the employment of an engineer to maintain concrete vibrators, leveling machines and finishing machines, power saws, portable generators and power buggies on all jobs where two or more such machines are used. Another clause asked by the union would make general contractors responsible for compliance by subcontractors.

According to Peter Weber, business manager of the local, the union is merely asking that building contractors accept a clause long used in heavy construction and now effective with a majority of the local's employers. Maintenance of such power equipment, he said, has been part of the union's recognized jurisdiction for 40 years and should cause no problem with other crafts.

Building contractors, resisting the clause as a form of featherbedding, predict, however, that it would set off a wave of jurisdictional disputes with trades which they claim now operate and normally maintain, these small power units. Cited as examples of the trades with which disputes might arise and the equipment involved are: carpenters—electric saws, drill saws and sanders; masons—concrete finishing and grinding machines; laborers—power buggies and vibrators; electricians—welding machines and other electrical tools.

The New Jersey Association has notified the international union, the National Joint Board for Settlement of Jurisdictional Disputes and the AFL-CIO Building and Construction Trades Department of the nature of the dispute and its possible implications. Meanwhile, it has asked the National Labor Relations Board for a temporary injunction against the union.

Date: September 20, 1956

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND INSTALLING OF ELEVATORS AND MOVING STAIRS
AT
BARNHART ISLAND POWER PLANT
AND
LONG SAULT DAM
SPECIFICATIONS NOS. PA-5-12563
ST. LAWRENCE CONTRACT NO. 833

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and installing of Elevators and Moving Stairs for the Barnhart Island Power Plant and Long Sault Dam near Massena, St. Lawrence County, New York until 10:30 A. M. Eastern Daylight Saving Time on the 20th day of September, 1956, at the Authority's office, 250 Broadway, Room 1305, New York, New York, at which time and place the proposals will be publicly opened and read aloud.

The work includes the design, manufacture, delivery, installation, and maintenance of seven elevators and two moving stairs, and the associated equipment and services.

The work shall be completed on or before December 1, 1958.

Plans, Specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 220 Broadway, Room 1306, New York 7, New York, upon application and prepayment of a fee of Ten (10.00) dollars per initial set of contract documents and Five (5.00) dollars per set for additional sets, no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Prequalification Date: September 6, 1956

Board of Education—Bureau of Construction

Notice Re: Prequalification Forms for Contractors

NOTICE IS HEREBY GIVEN THAT Director of the Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York, will receive applications for prequalification of bidders, from Contractors who may wish to submit bids for the proposed hereinafter specified contracts, as follows:

For general construction, plumbing and drainage, heating and ventilating, electrical work and lighting fixtures and elevator for the Bronx H. S. of Science, West 205th St. and Goulden Ave., The Bronx.

Prequalification application forms will have to be secured and must be submitted to the Director, Bureau of Construction office, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York.

Bids when advertised will be received from prequalified bidders only.

The time for submitting prequalification application forms for the above contracts will expire on Thursday, September 6, 1956.

WILLIAM H. CORREALE,
Director.

Dated: August 22, 1956

Make Plans Accessible to Distant Bidders

Plans and specifications for inspection by distant bidders may be filed at any of **Engineering News-Record** offices without charge. Or a sufficient supply may be deposited at such of our offices as seem desirable, subject to your usual requirements in the matter of deposits, etc. We assume full responsibility for return of plans or collection and return of deposits.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.10 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, 330 West 42nd Street, New York 36, N. Y.

Bids: September 13, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 13th day of September 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, G. L. Nickerson, District Engineer, 353 Broadway, Albany 1; N. Y.						
Greene (Rte. 42)	FERC 56-72	Shandaken-Lexington, Pt. 2, S.H. 1774 Proj. ER-64(1);	0.34	Stream Channel Improvement	$2,500 Plans $10	$45,000
Greene (Rte. 23)	FERC 56-73	Catskill-South Cairo, S.H. 613 Proj. ER-65(1)	0.54	Stream Channel Improvement	$4,500 Plans $10	80,000
DISTRICT No. 2, Lacy Ketchum, District Engineer, 109 No. Genesee St., Utica, N. Y.						
HERKIMER	FASS 56-10	Ueber Road (County Road) Proj. S-466(1)	2.89	Bit. D. S. Treated Gravel Precast-Prestressed Conc. Beam 59'	$17,000 Plans $15	$317,000
DISTRICT No. 3, W. Robinson, District Engineer, Weigh Lock Building, 301 E. Water St., Syracuse, N. Y.						
Onondaga (Rte. 48)	FAC 56-8P FGC 56-9 FASH 56-6P FARC 56-63	City of Syracuse: State Fair Boulevard The Lake Onondaga West Shore Development, North-West Arterial Connection: Solvay-State Fair-Syracuse, S.H. 1353-1353A, Baldwinsville-State Fair, S.H. 8406 Proj. U-UG-991(5)	7.37 (2.79) (Acc.)	Asp. Conc. Ty. 1A = 9.82 Mi. Misc. Work = 0.34 Mi. 4 Hy. Sep. Comp. I-Beams 135.3', 98', 158.9' and 155.3' 1 RR. Sep. Comp.-I-Beam 382' 1 Ped. Over Pass Comp. I-Beam 145.8' 2 Ped. Over Passes I-Beams 453.2' and 153.5' 2 Ped. Over Passes Precast Prestressed Conc. Beams 217.5' and 176' 1 RR. Sep. I-Beam 25' 1 Vehic. Underpass Conc. Rig. Frame 32'	$325,000 Plans $100	5,885,000
DISTRICT No. 6, J. H. Thomas, District Engineer, 30 W. Main St., Hornell, N. Y.						
Chemung (Rte. 17)	FARC 56-68	Elmira-Horseheads Connection, Pt. 1, F.A.S.H. 54-15 Elmira-Lowman, S.H. 5207 Proj. U-221(8)	0.46 (0.70) (Acc.)	Asp. Conc. Opt. = 0.40Mi. Misc. Work = 0.06 Mi. (Cem. Conc. Pavt. on Ramps = 0.70 Mi.) Hy. Sep. Comp. I-Beam 156.8' Br. Comp. Girder = 177.4'	$65,000 Plans $50	1,180,000
Yates (Rte. 14A & 54)	FARC 56-89	Dundee-Penn Yan, S.H. 5324; Penn Yan Village, S.H. 5291; Penn Yan-Halls Corners, S.H. 5323; Penn Yan-Potter, Pt. 1, S.H. 1596; Keuka-Penn Yan, Pt. 3, S.H. 8523 & Penn Yan Village: Lake Street, S.H. 9325 Proj. F-U-146(2), U-529(7)	4.66	Asp. Conc. Opt. Comp. I-Beam Br. 139'	$100,000 Plans $50	1,790,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Duzee St., Watertown, N. Y.						
St. Lawrence (Rte. 37B)	FASSH 56-4	Village of Massena: Center St.-Parker St. Bridge and Interchange Proj. US-467(1)	0.64 (0.60) (Acc.)	Asp. Conc. Opt. Bridge-Welded Plate Girder 840'	$130,000 Plans $25	2,420,000
St. Lawrence (Rte. 37)	FATC 56-1	Massena-South: Side Route, Pt. 1, F.A.S.H. 56-13 Massena-South: Side Route, Pt. 2, F.A.S.H. 55-7 Massena-Helena, Pt. 1, S.H. 1261 Proj. U-580(11)	5.13	Traffic Signal System	$4,000 Plans $10	73,000
DISTRICT No. 9, J. C. Frederick, District Engineer, 71 Frederick Street, Binghamton, N. Y.						
Delaware (Rtes. 28&30)	BWS 56-1	Andes-Margaretville, S.H. 8017 Margaretville-Halcottsville, S.H. 5384	0.46	Sanitary Sewer System = 0.44 Mi. Misc. Work = 0.02 Mi.	$10,000 Plans $10	$171,000
DISTRICT No. 10, M. E. Gocr, District Engineer 325 W. Main Street, Babylon, L. I., N. Y.						
Suffern (Rte. 110)	FGRC 56-70	Huntington-Amityville, Pt. 2, S.H. 1219 Proj. D-AD-U-UG-8(2)	0.22	9" Cem. Conc. Pavt. 2 at 25' Wide = 0.19 Mi. Misc. Work = 0.03 Mi. R.R. Sep. Plate Girder 133'	$40,000 Plans $15	603,000
Kings	FAPE 56-1	Prospect Expressway Cont. 3A Proj. U-1081(2)	0.78 (1.63) (Acc.)	9" Cem. Conc. Pavt. 2 @ 36' Var. Wide = 1.13 Mi. Sheet Asp. Pavt. = 1.15 Mi. Misc. Work = 0.13 Mi. 3 Hy. Sep. Steel Girder 114.7', 107.6' and 135.5' 1 Ped. Over Pass Steel Girder 159.7'	$330,000 Plans $100	$6,043,000
Bronx	FAMDE 56-1	Major Deegan Exp. & Ext. (Cont. 18) Proj. U-1082(22)	7.33	Landscaping and Misc. Work	$12,000 Plans $15	$213,000
DISTRICT No. 10 (Contd.)						
Nassau & Suffolk	NSP 56-1 CAPSP 56-1 SAGSP 56-1 SSP 56-2 WSP 56-1	Northern State Parkway; Captree State Parkway; Sagtikos State Parkway; Southern State Parkway and Wantagh State Parkway	36.98 (0.90) (Acc.)	Cem. Conc. Pavt. = 0.50 Mi. Fencing, Planting, and Misc. Work = 36.98 Mi.	$12,000 Plans $10	230,000

Any projects in this letting that are on the Federal-Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: September 18, 1956

Contract EXD-120.062

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
SECOND FLOOR
FOOD SERVICES STOCKROOM

Sealed proposals for altering a portion of the second floor of the Port Authority Building, 111 Eighth Avenue, New York 11, New York, will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1160, 111 Eighth Avenue, New York 11, New York, until 2:30 P.M. on Tuesday, September 18, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, August 20, 1956

Prequalification Date: September 6, 1956

Board of Education —Bureau of Construction

Notice Re: Prequalification Forms for Contractors

NOTICE IS HEREBY GIVEN THAT Director of the Bureau of Construction, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York, will receive applications for prequalification of bidders, from Contractors who may wish to submit bids for the proposed hereinafter specified contracts, as follows:

For general construction, plumbing and drainage, heating and ventilating, electrical work and lighting fixtures for: Public School 138, Pugsley & Olmstead Aves, Virgil Street and Lafayette Avenue, The Bronx.

For Playground Development, including plumbing and drainage—Junior High School 216, 65th Avenue, between 174th and 175th Streets, Flushing, Queens.

Prequalification application forms will have to be secured and must be submitted to the Director, Bureau of Construction Office, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York.

Bids when advertised will be received from prequalified bidders only.

The time for submitting prequalification application forms for the above contracts will expire on Thursday, September 6th 1956.

WILLIAM H. CORREALE
Director

DATED: August 20, 1956.

Bids: October 8, 1956

Filling and Subsurface Stabilization for Central Market Development

PUERTO RICO PORTS AUTHORITY
SAN JUAN, PUERTO RICO

Sealed bids in triplicate for filling and subsurface stabilization for Central Market Development, San Juan, Puerto Rico, will be received by the Puerto Rico Ports Authority at the Office of the Executive Director at Building 65, Isla Grande Airport, San Juan, Puerto Rico, until 2 O'clock P.M. (Puerto Rico Time) on the 8th day of October, 1956, at which time and place all bids received will be publicly opened and read aloud.

The work consists of the construction of a sand or rock fill dam in a dredged trench, the placement of stabilizing fill over an area for future construction, vertical sand drains, and other incidental work. The fill for the sand dam and the stabilizing fill may be furnished by hydraulic dredging or placed dry. Listed below are the estimated quantities for the principle items of work based on a dam 2,300 feet (approx.) long. Bids are also requested for construction based on a 1,300 feet (approx.) long dam.

630,000 C.Y. Sand Blanket
1,487,000 C.Y. Fill in Fill Areas
1,600,000 L.F. Vertical Sand Drains
415 L.F. Steel Sheet Piling Bulkhead

SAND DAM

957,000 C.Y. Excavation
550,000 C.Y. Sand Fill for Dam

or ROCKFILL DAM

801,000 C.Y. Excavation
235,000 Tons Random Rock Fill
23,500 Tons Crushed Stone Transition Layer
23,500 Tons Sand and Gravel Filter Layer
260,000 C.Y. Random Sand Fill Behind Rock Dam

Incidental work includes but is not limited to: Clearing and Grubbing, Preparation of Site, Sand and Gravel Filled Drainage Ditches, Horizontal Pipe Drains, Settlement Plate Assemblies, Corrugated Metal Culvert and Perforated Metal Collector Drain.

Contract Documents including plans and specifications may be obtained until 48 hours prior to assigned time for opening the bids by depositing Twenty-five Dollars ($25.00) in cash or a certified check with the Puerto Rico Ports Authority for each set of documents so obtained. The amount of the deposit will be refunded upon return of the documents in good condition within thirty (30) days after the date of opening of the bids.

A set of Contract Documents will also be available for inspection at the offices of Tippetts-Abbett-McCarthy-Stratton, Engineers, 62 West 47th Street, New York, New York.

The Puerto Rico Ports Authority reserves the right to reject any or all bids and waive any informalities in bids received.

A certified check or bank draft payable to the Puerto Rico Ports Authority, U. S. Government Bonds or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount of five percent (5%) of the bid shall be submitted with each bid.

SALVADOR V. CARO,
Executive Director

San Juan, Puerto Rico

Bids: September 13, 1956

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y. Pursuant to the provisions of the Canal Law, sealed proposals will be received until 10:30 A.M., Daylight Saving Time, on September 13, 1956 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 56-6 for
Resurfacing a Portion of Delta Dam on the Mohawk River, near Rome, Oneida County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York
(b) Mr. Lacy Ketchum, District Engineer, 109 North Genesee Street, Utica, New York
(c) Department of Public Works, 270 Broadway, New York City, N. Y.

The deposit for Plans and Proposal Forms for the contract is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Engineer's Estimate of Cost for this contract is $15,000.00.

The proposal for the contract must be submitted in a sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. The proposal must be accompanied by a draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $800.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

Bids: October 3, 1956

Construction of Pumping Station

ADVERTISEMENT

Notice is hereby given that sealed bids will be received in accordance with the law by the District Commissioners of the Second Taxing District of the City of Norwalk, Connecticut until 10:30 o'clock, A.M. Eastern Daylight Saving Time on the third day of October, 1956 at the office of the District Commissioners of the Second Taxing District, City Hall, South Norwalk, Connecticut, for furnishing materials and performing the labor for constructing a pumping station and installing piping and equipment therein at the water filtration plant of the District, all in accordance with plans and specifications prepared by Buck, Seifert and Jost, Consulting Engineers, 112 East 19th Street, New York 3, New York.

Copies of the plans and specifications may be obtained either from the office of the District Commissioners or from the Consulting Engineers upon deposit of Twenty-Five ($25.00) Dollars, which sum will be refunded upon return of the plans and specifications in good condition within ten (10) days after the date on which bids are received or else the entire deposit will be forfeited.

The work to be done includes furnishing all materials and labor, tools, plant and equipment necessary for constructing, installing and completing, ready for operation, a booster pumping station approximately forty-four (44') feet by twenty-four (24') feet in plan, of reinforced concrete construction; installing two (2) electric motor driven centrifugal pumping units furnished by the District under another contract and furnishing and installing all piping, valves, electrical power and light wiring and controls and other accessories and appurtenances.

Each proposal must be accompanied by a certified check payable to the Second Taxing District, Norwalk, Connecticut or bid bond from a reliable surety company authorized to do business in the State of Connecticut and satisfactory to the Commissioners, in amount equal to fifteen (15%) percent of the proposal. The certified checks will be retained to pay for any damage or loss to the Commissioners, or the liability bond will accrue in case the successful bidder shall neglect or refuse to enter into a contract in accordance with his proposal.

The Commissioners reserve the right to consider bids for thirty (30) days after their receipt before awarding any contract and the right is reserved to accept any bid or to reject any or all of them.

DISTRICT COMMISSIONERS
SECOND TAXING DISTRICT
CITY OF NORWALK,
CONNECTICUT
IRVING C. JENNINGS—
COMMISSIONER
JOHN A. O'CONNOR—
COMMISSIONER
STANLEY H. STROFFOLINO—
COMMISSIONER
ELMER F. BRACKEN—
GENERAL MANAGER
BUCK, SEIFERT AND JOST
CONSULTING ENGINEERS

U. S. Government

GOVT. OF DIST. OF COL., DEPT. OF HIGHWAYS, Aug. 20, 1956. SEALED PROPOSALS will be recd. in Rm. 404, 499 Pa. Ave., N.W., Wash. 1, D. C., until 2 PM, Sept. 20, 1956, EDT, and then publicly opened and read for Rehabilitation of the Operating Machinery of the 11th St. Bridge over the Anacostia River. Proposal forms, plans and specns. obtainable from Supervisor, Contr. & Bond Section, Procurement Office, D. C., Rm. 406, 499 Penn. Ave. N.W., upon deposit of a certified check for $20.00 per set, payable to Collector of Taxes, D. C. (Tel. NA 8-6000, Ext. 23781).

Sealed bids for construction (except elevator) of the Girls' Dormitory, Gallaudet College, Washington, D. C., will be received until 2:00 P.M., EDST Sept. 20, 1956 in Rm. 7100 GSA Regional Office Bldg., 7th & D Sts., S.W., Washington, D. C., and then publicly opened in Rm. 7100. Bidding material may be obtained by contractors desiring to bid the entire project in Rm. 4304 GSA Bldg., 19th & F Sts., N.W., Washington, D. C. Phone: EX-3-4300, Extn. 2387. Public Buildings Service, General Services Administration.

Higher Profits
Lower Bids

either—or both—are possible for contractors operating modern equipment as featured in the advertising pages of this issue.

OFFICIAL PROPOSALS

Bids: September 13, 1956

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—PURSUANT to the provisions of Highway Laws, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on September 13, 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON SCAJAQUADA CREEK EXPRESSWAY, NIAGARA THRUWAY TO DELAWARE PARK, CITY OF BUFFALO, ERIE COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-95

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.

(b) Mr. E. G. H. Youngmann, District Engineer, 65 Court Street, Buffalo, New York.

(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $65,897.50.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $3300.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. W. JOHNSON
SUPERINTENDENT OF
PUBLIC WORKS

Bids: October 1, 1956

ADVERTISEMENT FOR BIDS

Sewage Treatment Plant

The Charter Township of Warren,
Macomb County, Michigan

The Charter Township of Warren, Macomb County, Michigan, will receive sealed bids for the construction of a 24 M.G.D. sewage treatment plant.

The work includes: service building (with pumping station), filter-dryer building, garage, chlorine building, grit chambers, primary settling tanks, aeration tanks, final settling tanks and chlorine contact chamber.

This work also includes concrete road, earthwork, pipes, valves, pumps, blowers, instrumentation, and process equipment (except dryer and incineration equipment).

Plans will be available after August 20, 1956.

Bids will be received until 2:00 PM, E.S.T. Monday, October 1, 1956, at the Township Hall at 22720 Van Dyke Avenue, Van Dyke, Michigan, at which time and place all bids will be publicly opened and read aloud. The successful bidder will be required to furnish satisfactory performance and labor bonds.

Contract documents, plans, and specifications will be on file for public inspection after August 20, 1956, at the office of Johnson & Anderson, Inc., Consulting Engineers, 1307 Pontiac State Bank Building, Pontiac, Michigan, and copies may be had by depositing One-Hundred Dollars ($100.00) for each set, which amount will be refunded upon return in good condition of each set within ten (10) days after the opening of bids.

The Charter Township of Warren reserves the right to reject any or all bids and to waive any irregularities in bidding.

A certified check or bank draft payable to the Charter Township of Warren or a satisfactory bid bond executed by the bidder and Surety Company in an amount equal to five percent (5%) of the bid shall be submitted with each bid.

The bid shall be accompanied by a letter from a surety company satisfactory to the Township stating that the necessary bonds will be furnished by it to the contractor bidding in the event the bidder is successful.

No bid may be withdrawn after the scheduled closing time for receipt of the bids for at least thirty days.

Charter Township of Warren
Macomb County, Michigan
HILDEGARDE M. LOWE,
Clerk

Bids: September 11, 1956

Contract 462

ACCESS ROADS AND BRIDGES

SEALED BIDS will be received by the Board of Water Supply, at its office, 13th floor, 120 Wall Street, New York City, until 11:00 A.M. Eastern Daylight Saving Time (10:00 A.M. Eastern Standard Time) on Tuesday, September 11, 1956 for Contract 462, for the construction of approximately 1¼ miles of gravel road, a timber highway bridge about 180 feet long; a steel and concrete highway bridge about 250 feet long; a sewage treatment plant; an engineer's office and a soils laboratory; the excavation of exploratory shovel cuts and other incidental work. The location of the proposed work is in the Town of Deposit, Delaware County, New York.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1317, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

Bids: September 6, 1956

Power Authority of The State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
CONSTRUCTION OF
RELOCATION OF NEW YORK STATE HIGHWAY ROUTE 37 BETWEEN WADDINGTON AND COLES CREEK
ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATIONS NO. PA-5-11021
ST. LAWRENCE CONTRACT NO. 29

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the construction of relocation of New York State Highway Route 37 and a portion of the Norwood and St. Lawrence Railroad between Waddington and Coles Creek, St. Lawrence County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 6th day of September, 1956, 270 Broadway, Room 1305, New York, New York, at which time and place proposals will be publicly opened and read aloud.

The principal items of work are:
Estimated:

813,000 cu. yds.	Excavation
694,000 cu. yds.	Embankment
20,000 cu. yds.	Riprap
45,000 cu. yds.	Foundation Course Gravel
14,000 cu. yds.	Asphaltic Concrete
115,000 pounds	Corrugated Metal Arch Culverts
6,600 lin. ft.	Railroad Track
1	Bridge 75 Foot Length (Structural Steel Furnished by the Authority)
1	Bridge 300 Foot Length (Structural Steel Furnished by the Authority)

The length of the relocated highway is approximately 5.9 miles.

The length of the relocated railway is approximately one mile.

All work shall be completed on or before June 1, 1958.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Ulquestionable Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

Bids: September 11, 1956

Power Authority of The State of New York

ADVERTISEMENT FOR PROPOSALS
FOR CONSTRUCTION OF
RELOCATION OF NEW YORK STATE HIGHWAY ROUTE 37B BETWEEN TOWN LINE ROAD & LOUISVILLE CORNER
SPECIFICATIONS NO. PA-5-11022
ST. LAWRENCE CONTRACT NO. 30

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the relocation of New York State Highway Route 37B between Town Line Road and Louisville Corner, St. Lawrence County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 11th day of September, 1956, 270 Broadway, Room 1305, New York, New York, at which time and place proposals will be publicly opened and read aloud.

The principal items of work are estimated to be:

505,000 Cubic Yards of Excavation
420,000 Cubic Yards of Embankment and Backfill
6,300 Cubic Yards of Riprap
85,000 Cubic Yards of Foundation Course Gravel
9,000 Cubic Yards of Broken Stone Base Course
6,500 Cubic Yards of Bituminous Macadam Base Course
11,000 Tons of Plant Mix Asphaltic Concrete
7,000 Linear Feet of Cable Guide Railing
1,000 Linear Feet of Reinforced Concrete or Corrugated Metal Culvert Pipe (various sizes)
70 Acres of Seeded Topsoil and Seeding
133,000 Gallons of Bituminous Material

The length of the relocated highway is approximately 6.2 miles.

All work shall be completed on or before June 1, 1958. The pavement shall be completed and the full length of the road opened to traffic on or before September 1, 1957.

Plans, Specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Ulquestionable Hall & Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Ten ($10.00) dollars per initial set and Five ($5.00) dollars per set for additional sets, no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

OFFICIAL PROPOSALS

Bids: September 18, 1956

New Jersey Turnpike Authority

CONTRACT NO. N-78

Proposals are invited for Contract No. N-78 which involves landscaping at four Interchanges on the Newark Bay-Hudson County Extension of the New Jersey Turnpike in Essex and Hudson Counties together with the maintenance of landscaping at such locations for a specified period thereafter.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 O'clock, Eastern Daylight Saving Time, on the morning of September 18, 1956, at which time and place said proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract Documents may be examined during office hours after August 27, 1956, at the office of Alfred Geiffert, Jr., 101 Park Avenue, New York, New York, and at the office of the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey. Contract Documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. The payment will not be refunded and contract documents are not required to be returned.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

August 23, 1956

Bids: September 13, 1956

New Jersey Turnpike Authority

CONTRACT NO. GR-35

Proposals are invited for Contract No. GR-35 which involves the construction of additions to the existing sewage treatment plant at Service Area 3-S, in Delaware Township, Camden County, New Jersey.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Brunswick, New Jersey, until 11:00 A. M., Eastern Daylight Saving Time, on the morning of September 13, 1956, at which time and place said Proposals will be publicly opened and read.

Bidders must submit with their proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after August 24, 1956, at the New Jersey Turnpike Authority Administration Building New Brunswick, New Jersey, and at the office of the Consulting Engineer, Elson T. Killam, 529 Millburn Avenue, Short Hills, New Jersey. Contract Documents will be furnished upon payment of Ten Dollars ($10.00) for each set, upon application to the Authority. The payment will not be refunded and contract documents are not required to be returned.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman

August 21, 1956

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

OFFICIAL PROPOSALS

Bids: September 25, 1956

Contract 453

WEST DELAWARE TUNNEL

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 11:00 A.M. Eastern Daylight Saving Time (10:00 A.M. Eastern Standard Time), on Tuesday, September 25, 1956, for Contract 453, for the construction of a portion of the West Delaware Tunnel of the Delaware system, comprising the construction of about 26,000 linear feet of tunnel, including Shaft 4 approximately 380 feet deep, located in the Town of Colchester, Delaware County, and in the Town of Rockland, Sullivan County, New York.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1317, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. Arrangements will be made whereby prospective bidders desiring blueprints of the contract drawings for their own use may secure same, the cost thereof to be paid by them. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

OFFICIAL PROPOSALS

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. 108-47501) will be received at Denver, Colorado, until October 16, 1956, for furnishing two 33,500-hp, 257-rpm, vertical-shaft, single-runner, Francis-type hydraulic turbines for Fremont Canyon Power Plant, Missouri River Basin Project, Wyoming. Delivery is desired within 720 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
New York: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Wanted: Civil Engineers for permanent work on bridges in both design and field offices of established consulting engineer. Please send education and experience resume, references, and salary requirement. P-2368, Engineering News-Record.

Associate Professor of Civil Engineering—BS & MS in Civil Engineering to teach engineering mechanics, surveying, highway & reinforced concrete. Salary $5400 for nine months. Location—Texas. P-2297, Engineering News-Record.

Designers-Detailers—Well established consultant located in New York State has permanent openings for designers and detailers experienced in structural steel and reinforced concrete structures for highways. Send resume to P-2572, Engineering News-Record.

Supervisory positions for High Dam Construction in India. Former Supervisory employees or those now in supervisory positions who have worked with me on projects in the past and are interested in foreign work. Contact me by letter: M. H. Slocum, 504 East Pine Street, Alhambra, California.

Structural Engineers for building design work. Consulting Engineers Office. Write training, experience and salary. Saul Shaw & Co., 24 Commerce St., Newark, N. J.

Wanted—Project Manager with extensive experience in the supervision and management of large scale concrete paving operations. Permanent position with rapidly growing organization. State experience, age, salary, availability and references. Reply P-2622, Engineering News-Record.

Civil Engineer: City of Middletown, Ohio, population (42,000) invites applications. Registration as a professional engineer in State of Ohio required. Salary, starting $500.58 per month, with increase after six months and each years thereafter for next three years to final salary of $600.70, also fringe benefits. Desirable qualifications: Design of Municipal Improvements, pavements, sanitary and storm sewers, buildings, retaining walls, supervise field parties and construction projects. Inquiries and personnel record data should be directed to C. A. Boeke, Director of Public Service, Municipal Building, P. O. Box 530, Middletown, Ohio.

Gen'l Superintendent qualified engineer for North Jersey contractor, must have proven experience on industrial buildings & gov't. projects. Salary open. P-2608, Engineering News-Record.

Construction or Railway Equipment Salesman. Young man, single or married, college graduate or engineering education, sales experience desirable but not essential. Willing learn sell and buy construction, railway equipment by correspondence and phone. Must be sober, industrious, reliable. St. Louis district. Give full details. P-2737, Engineering News-Record.

Assistant City Engineer for general municipal work. Send personal data. Salary range $4950-$5430 plus benefits. City Engineer, Watertown, New York.

Structural Engineer or C.E. graduate, to assist chief engineer in charge of design, detail, fabrication and erection of structural steel. Knowledge of drawing room and structural fabricating shop practices required. Salary open. Submit complete resume and photo to Southern Iron Works, Inc., P.O. Box 130, Alexandria, Va.

Civil Engineers, experienced in design of sewerage systems and treatment plant. Excellent opportunity for young sanitary major in expanding well-established firm. Location southern Connecticut. Genovese & Associates, 291 Elm Street, New Haven, Connecticut.

Civil Engineers. Long established consulting engineer, eastern United States, has openings for graduate engineers with experience in either highway and bridge design or field and laboratory experience in soil mechanics. Positions permanent. Liberal employee benefits. Salaries open. Send resume to P-2627, Engineering News-Record.

Assistant to County Engineer—Central New Jersey area. Design and construction of secondary roads and bridges and the development of a road building program. Must have B.S. in Civil Engineering or equivalent. State experience, expected salary and references. Applications answered and kept confidential. P-2721, Engineering News-Record.

Construction Superintendent required by New York firm. Must be experienced in earth and rock moving—utility work—heavy structure construction and paving. Send resume of experience, age, availability and salary desired. P-2712, Engineering News-Record.

Wanted: Young engineer with field experience in heavy construction for quantity take off and estimating assistance in Pittsburgh office of widely known construction company. P-2707, Engineering News-Record.

Designers—Steel, Concrete, Electrical Piping, Air-Cond., Power Plants & Industrial Bldgs. Marbarry Corp., 120 Greenwich St., N.Y.C. Rector 2-3749.

(Continued on the following page)

EMPLOYMENT OPPORTUNITIES

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The advertising rate is $28.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

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P. O. Box 12 N. Y. 36, N. Y.

POSITIONS VACANT

(Continued from preceding page)

Wanted—Young man, age 23 to 35, with water works experience to work for growing private water utility in active Illinois city. Excellent opportunity as assistant to manager. Salary open. Please submit complete resume stating education, age, experience, salary desired and date of availability. P-2609, Engineering News-Record.

Wanted: Registered Professional Engineer specializing in Soil Mechanics, capable of taking complete charge of Soil Mechanics office performing soil exploration, laboratory testing, and writing engineering reports with respect to foundation requirements. Experience necessary. Some experience in structural design of foundations preferable but not essential. Good salary commensurate with qualifications. State qualifications in full, experience resume, references and salary requirements. P-2826, Engineering News-Record.

General Superintendent, qualified engineer for Kansas contractor, must have proven experience on industrial buildings & gov't. projects. Salary open. P-2754, Engineering News-Record.

Architectural Engineer — Experienced steel and concrete designer for attractive position in office of Central Pennsylvania Architect. Work includes churches, schools and commercial buildings. Permanent position and attractive salary. P-2756, Engineering News-Record.

Field Engineer—Preferably civil engineering graduate with several years field experience for large heavy construction contractor to lay out work, make simple estimates and assist superintendent. Permanent position. Location Western Maryland or Chicago. Excellent opportunity for ambitious men as several of our executives have started with us in similar positions. Please state age, education, short experience outline and salary wanted. P-2765, Engineering News-Record.

Wanted—Sanitary Engineer, Stream Biologist, and Sanitary Chemist. We have need for a Sanitary Engineer, a stream biologist, and a sanitary chemist. Excellent opportunities for security and advancement. Salary dependent upon training and experience. Write Personnel Supervisor, State Board of Health, P. O. Box 210, Jacksonville, Florida.

Heavy Construction Superintendent — Top level mature man wanted. Should have as a minimum, for the last 10 years, been continuously employed as superintendent on foundations, heavy concrete work, bridges, treatment plants, industrial construction and similar work. Permanent position, congenial working conditions and commensurate salary. Also need younger man with corresponding qualifications as assistant to our general superintendent. P-2791, Engineering News-Record.

Recent Engineering Graduates, 1 or 2 years' experience, for Department of Public Works. Salary open. Write Director of Personnel, Village of Maywood, Illinois.

Engineer. Unequalled opportunity in growing general contracting business in Central Pennsylvania. Permanent position with opportunity for ownership participation. State experience, salary desired and age. P-2793, Engineering News-Record.

Civil Engineer — Experienced in design of airfield pavements, site preparation for structures, drainage and sub-structures. Must be currently engaged in design status and familiar with Civil Aeronautics and military airport criteria. Long time engagement indicated in modernair-conditioned office, Middle Atlantic location with excellent living environment. In reply, provide full particulars to include education, experience record, references, salary expected and when available. P-2787 Engineering News-Record.

POSITIONS VACANT

Highway and Bridge Designers, design draftsmen and surveyors by expanding highway engineering organization. Location, Middle-West. Give experience and references. P-2777, Engineering News-Record.

Engineers experienced in design and supervision of construction to work as resident engineers or prepare plans for water and sewer systems; also, architects for preparation of plans for general building work. State experience, age, salary required, when can report, and give references. Reply P-2827, Engineering News-Record.

POSITIONS WANTED

Civil Engineer, (soils, concrete), BSCE, 28, experience in construction engineering, supervision and control of earthwork and concrete. Desires permanent position. PW-2508, Engineering News-Record.

Specifications — Does the boss write the specs in your organization? If so let me take away that headache. Long consulting experience in many fields of engineering. PW-2616 Engineering News-Record.

Construction Manager. Industrial constr. Civil Engr., job-planning, cost-control, estimating & management specialist. Now situated Phoenix. Confidential replies. Reply PW-2527, Engineering News-Record.

Construction Executive: Fully qualified. Seventeen years in all phases of commercial and industrial construction. Estimating to completion, contract negotiation, project management. Age 40. Domestic or foreign. Seek new permanent connection with possible future advancement. Minimum $14,000. PW-2360, Engineering News-Record.

Chief Estimator or Project Manager. 38 BS&PE, thoroughly experienced in industrial, commercial and monumental construction. Location immaterial. Presently employed at $10,000 plus bonus. Reply PW-2592, Engineering News- Record.

Master Mechanic heavy duty equipment asphalt plant, sand and gravel and quarry erection and operation. Asphalt paving and road building. 14 years experience. PW-2694, Engineering News-Record.

Sales Engineer, BSCE, under 30. Background in heavy construction. Wishes to join growing construction equipment or materials company. PW-2504, Engineering News-Record.

Distr. Factory Rep., 37, College Grad., 8 yrs. experience shovel, scraper, other heavy equip. Desire Western location. References and resume furnished. Reply PW-2574, Engineering News-Record.

Construction executive desires profit sharing connection with West Coast organization: Graduate, licensed Civil Engineer with extensive and broad top supervisory experience all classes building construction—power plant; industrial and commercial buildings; very cost conscious good organizer, with national labor following. PW-2705, Engineering News-Record.

Construction Executive with 16 years experience in heavy construction with some municipal work. Experienced in managing a construction contracting firm. Seeks position managing company of branch. Will give consideration to position in French or Spanish speaking country. Please describe position available and possible earnings. PW-2711, Engineering News-Record.

Construction Supt. 6 yrs. Experience in building and heavy const. 29 years of age, B.S. in building const. Prefer permanent move to central or north Florida. PW-2708, Engineering News-Record.

POSITIONS WANTED

Construction Engineer. BS and BA degrees. Administrative, costing, estimating and bidding, design, project supervision and field experience in mechanical and structural. PW-2758, Engineering News-Record.

Project Engineer and Asst. Sup't., BSCE, 29, 6 yrs. experience heavy concrete construction. Seek position with future advancement. Domestic or foreign. PW-2755, Engineering News-Record.

Construction Supt. or Assist. available. PW-2770, Engineering News-Record.

Licensed Professional Engineer, 47 years experience railroad location and construction and underground electric distribution construction, available Nov. 15, 1956, for part time work or light full time work. Location East or South. Address PW-2768, Engineering News-Record.

Civil-Structural Engineer, P.E. age 31, 8 years diversified experience, desires responsible position with engineering or manufacturing firm in South East. PW-2764, Engineering News-Record.

Writer—Engineer seeks solid connection, degrees, experience publications. Salary secondary to right firm. PW-2766, Engineering News-Record.

Civil Engineer eight years experience in design and construction of bridges, powerhouses, industrial b'ldgs. & roads. Desires responsible position with contractor or engineering office. A. H. C. 35 Douglas Rd., Massena, N. Y.

Registered Engineer, 30 veteran desires opportunity in consulting or contracting firm, highways and structures. Present salary over $8000. Prefer middle west location. Replies answered promptly. PW-2790, Engineering News-Record.

Architectural Estimator—6 years experience in commercial, industrial, also bridges and sewer treatment plants. Some field experience. Prefer to be located in south or west. PW-2779, Engineering News-Record.

Construction Engineer—Estimator 20 years experience in all phases of highways—turnpikes, dams, and general contracting. Familiar with all sub-contractors & owner negotiations, age 47, best of references—available by Sept. 1st. PW-2785, Engineering News-Record.

Mechanical estimator—project manager. 10 yrs experience heavy chemical — industrial piping. Age 33. Present salary $9800. PW-2814, Engineering News-Record.

Engineer—C.E. Degree—30 years experience in structural design, steel and concrete, plant layout and engineering, material handling—Available for European assignment—Speak German, know French. PW-2810 Engineering News-Record.

Civil Soils Engr., age 32. M.S. soil mechanics, P.E. license. Chief of soils section and structural experience. Wishes advancement. PW-2805, Engineering News-Record.

Sales Representative

Representing leading manufacturer of smaller specialized contractors equipment, to the industry through exclusive dealers in the North Eastern States for 18 years. All dealers members of AED. Also have extensive manufacturing experience in an executive capacity. Desires opportunity of improving status, as present position holds no advancement. Age 42. Graduate Engineer.

BA-2829, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

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Edward A. Kolner

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TOwer 1-2300

ENGINEERS

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Engineers
Chemical
Electrical
Structural
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Mechanical

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Electrical
Structural
Mechanical

Type of Projects
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Hydro Power Plants
Steam Power Plants
Electric Substations
Petroleum Refineries
Petrochemical Plants

Engineers, Designers, and Draftsmen having qualifying experience in one or more of the above fields, please submit complete resume listing education, experience, salary history, present salary requirement, and availability date to:

5 West 45th St. New York 36, N. Y.
220 Bush St., San Francisco 4, Calif.

Confidential interview can also be obtained at: Scanlon Building, Houston, Texas, or Roosevelt Building, Los Angeles, Calif.

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Federal Aid Poser

ANNOUNCING ITS PLANS to begin design or construction of $142 million worth of sewage treatment plants next year (ENR Aug. 23, p. 26) New York City's Department of Public Works has expressed a hope that this work might qualify for $1,250,000 in federal aid under the nation's new water pollution control law (ENR July 5, p. 28).

But the arithmetic of the law, alone, would seem to preclude any such amount of aid going to New York City. Half of all the federal aid must go to cities of 125,000 population or less, and with six cities in New York State above this size limit, it hardly seems that any one of them could expect aid over a million dollars when the total amount allocated to New York State is only $2.7 million.

Aside from the arithmetic, there is the basic question of the purpose of this aid. In our opinion, it should be the intention to use the federal grants as an incentive to create spending on sewage works by cities that could not build without aid. In that situation there is serious doubt as to whether New York City—or Los Angeles, or Boston, or Pittsburgh, or Chicago—rates any of its state's allocation of the total $50 million authorized for this year. Using the federal aid merely to let communities construct what they would construct anyway, but at a smaller expenditure of available local funds, would defeat the purpose of the aid. No gain would be made in the rate of pollution abatement.

This is the puzzle administrators of the law now face; New York City's expressed hope is perhaps a good example of many such expectations to be dealt with.

Careers for Young Engineers

THERE IS FOOD FOR THOUGHT in some of the facts reported in the survey of where this year's graduates from engineering schools are going, which was published in the June 21 issue of ENR, p. 24. Foremost was the fact that despite the high salaries offered, most students placed major emphasis on the opportunities for advancement that the job offered, on the type of work or on its location. Jobs leading up to managerial positions were widely favored even when the starting rate was lower. On the other hand, jobs with big companies like the airplane manufacturers, where men might lose their individuality, were turned down despite high salaries offered.

The type of engineering studied by the students made little difference to the employers, although the heads of some schools reported an increasing interest in civil engineers. Most employers appear to think that they can adapt any type of engineering training to meet their particular needs.

And some employers paid little attention to scholastic standing. They appeared to be more interested in the man himself than in his scholastic record. At Carnegie Tech, the second and third highest offers, salary-wise, were received by the men with the two lowest scholastic records. Similarly, at the University of Washington, prospective employers paid little attention to class standing.

Whether this would be true in times when competition is less keen remains to be seen, but it does seem to point to the importance of developing personality along with scholastic ability.

In general, the survey appears to indicate that the engineering schools are on the right track in their current emphasis on more of the fundamentals and less specialization, especially when the training in fundamentals includes some courses in business administration. But more important, the evidence is clear that the young men now being turned out by our engineering schools are more interested in engineering as a career than as a field providing high starting pay.

The Tight Money Pinch

HIGHLY RECOMMENDED READING in last week's issue was "The Longer Look" article on page 105. Devoted to the tight money situation engineered by the Federal Reserve Board to ward off inflation, the article explained what is happening to construction financing as a result. And what is happening is not good. Housing is having rough going. Commercial building is dropping off. The financing efforts of states, municipalities and utilities are being hindered. Industrial building alone stands out as being able to command the funds it needs.

It is particularly important to be aware of these trends because contract awards, while still ahead of last year, are beginning to slow down. Thus far, there is no sign that the Federal Reserve is considering altering its tight money policy. In fact, as major banks raised their credit rates last week, a new rise in the discount rate loomed. So the present situation is likely to continue, in which high interest rates do not deter industrial borrowers, but do cause mortgage lenders to place their funds elsewhere and bond issues for public works to be deferred.

Unfortunately, the construction projects which are threatened—and they include water supply, sewerage and roads as well as housing and commercial building—are badly needed. Unfortunately, too, postponement of such projects only makes them cost more later, unless inflation is halted.

The next few months represent a crucial period for construction's future. And since construction is such an important element in the economy it is to be hoped that the money managers will not overlook its difficulties in their calculations.

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